

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problems Mailbox.**

The diagram illustrates a Primary System architecture, designated by reference numeral 10. The system is divided into two main functional areas: a Primary System (16) and Primary Analysts (36).

**Primary System (16):** This section is further divided into three sub-sections: 14, 15, and 16. Sub-section 14 includes Line Handlers (18, 18'). Sub-section 15 includes Alert Engines (20, 20'). Sub-section 16 includes Alert Dispatchers and User Servers (22, 22').

**Primary Analysts (36):** This section includes Analyst Workstations (36, 36', 36'') and Administrator Workstations (38, 38').

**System Components and Interconnections:**

- The Primary System (16) is connected to a NODS (via TIBCO) component.
- The Primary System (16) is connected to a Database Servers (30, 30') component.
- The Primary System (16) is connected to an Operations Server (32, 32').
- The Primary System (16) is connected to Operations W/S (34, 34').
- The Primary System (16) is connected to a Primary Analysts (36) component.
- The Primary System (16) is connected to an Administrator Workstations (38) component.

A diagram showing a 24-bit bus system. A horizontal line at the top is labeled '24' with a bracket underneath. Two vertical lines descend from this bus to two separate square boxes. Each box contains the text '18' with a horizontal line underneath. From the bottom of each box, three parallel horizontal lines extend outwards. A bracket on the left side of these lines is labeled '12'. An arrow labeled '12a' points from the top-left towards the first box. An arrow labeled '12b' points from the bottom-right towards the second box.

[illegible]



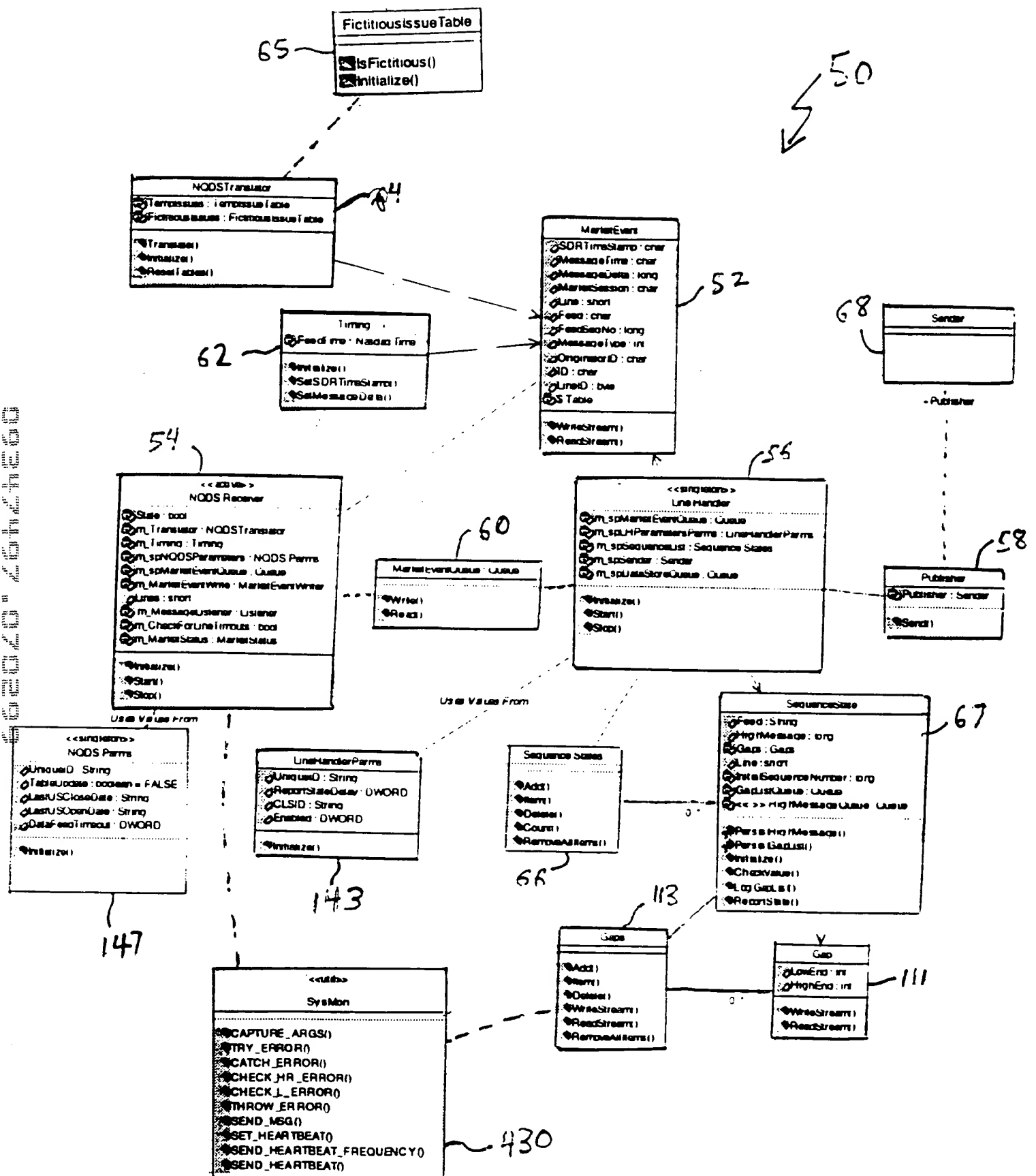
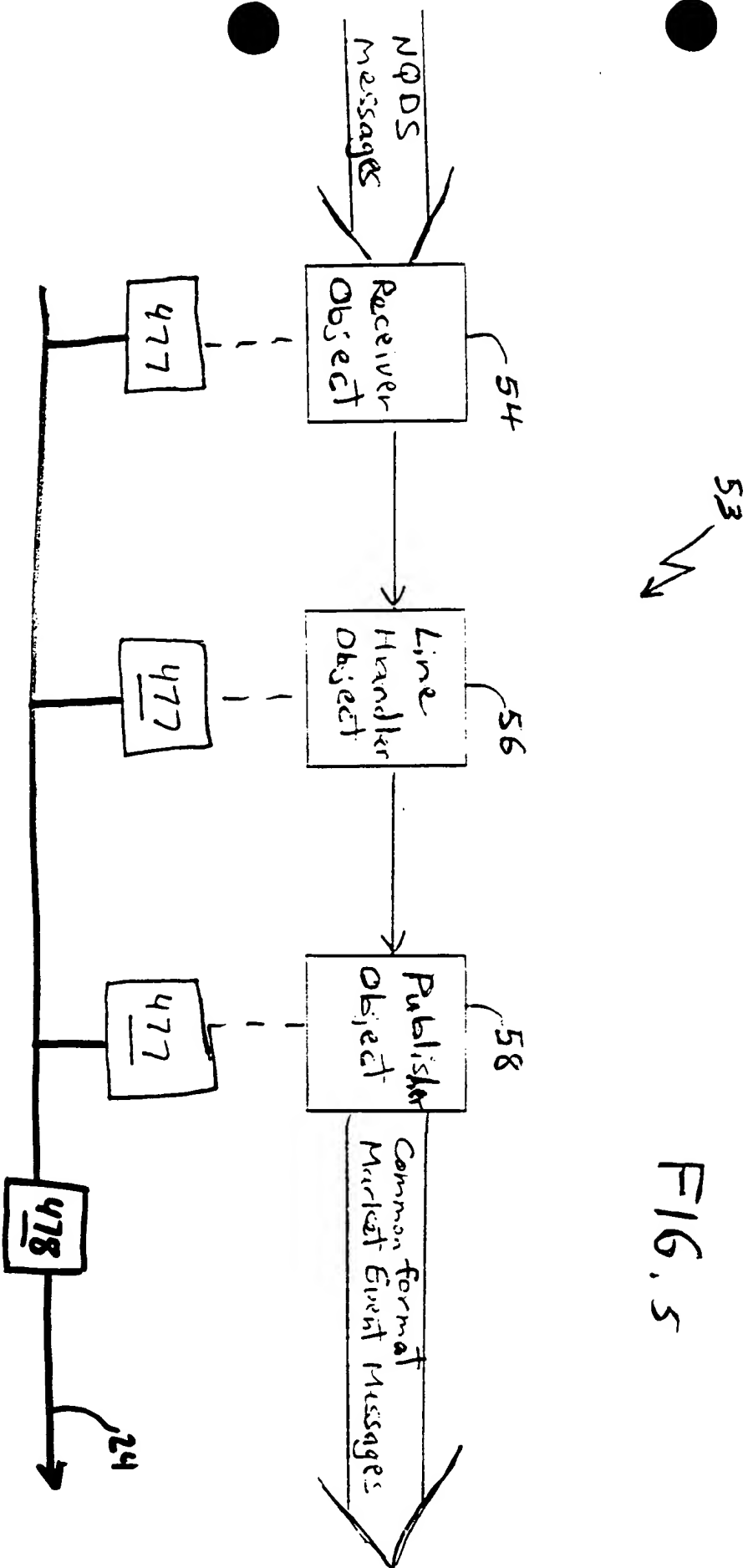


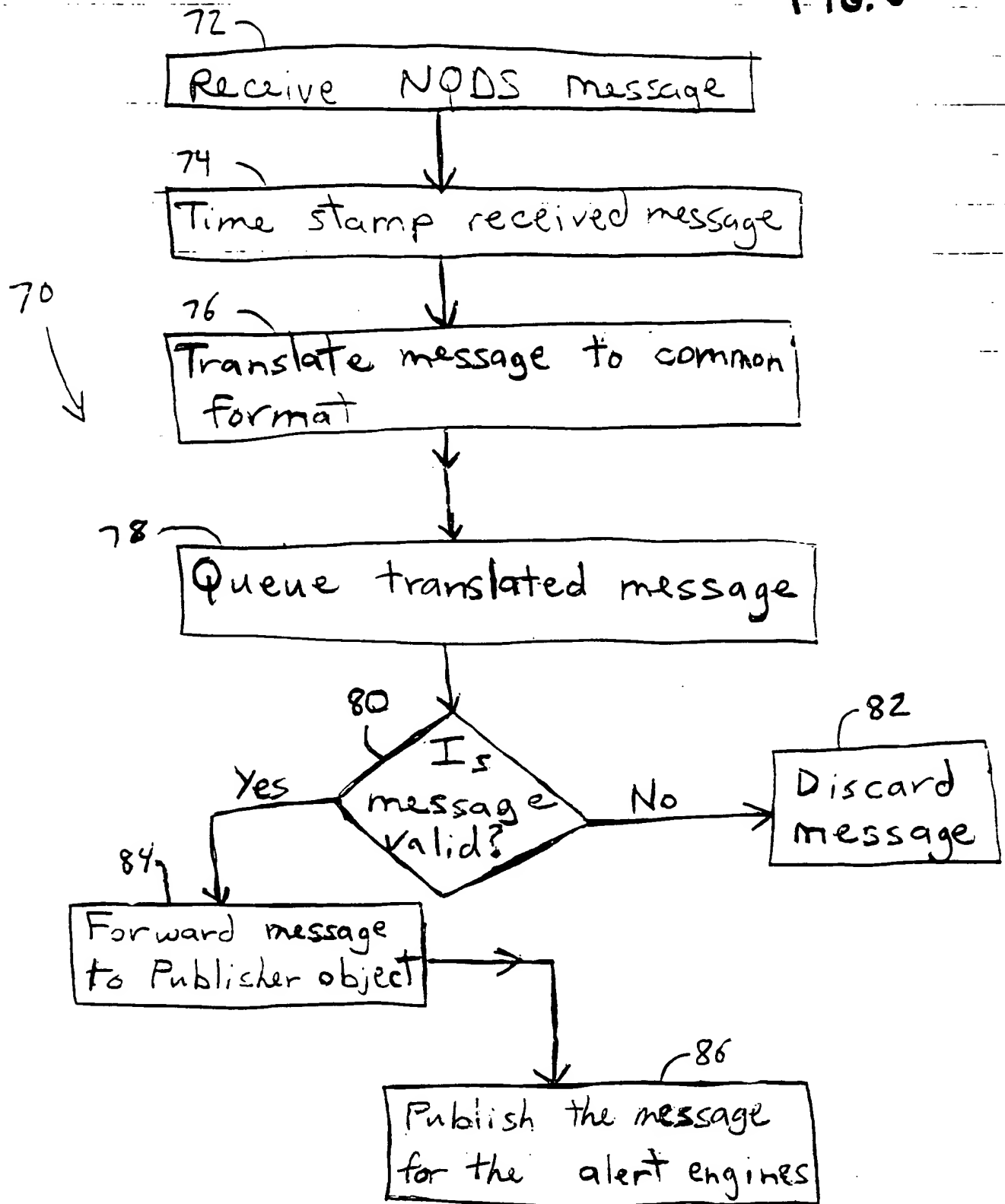
FIG 3





F16.5

FIG. 6



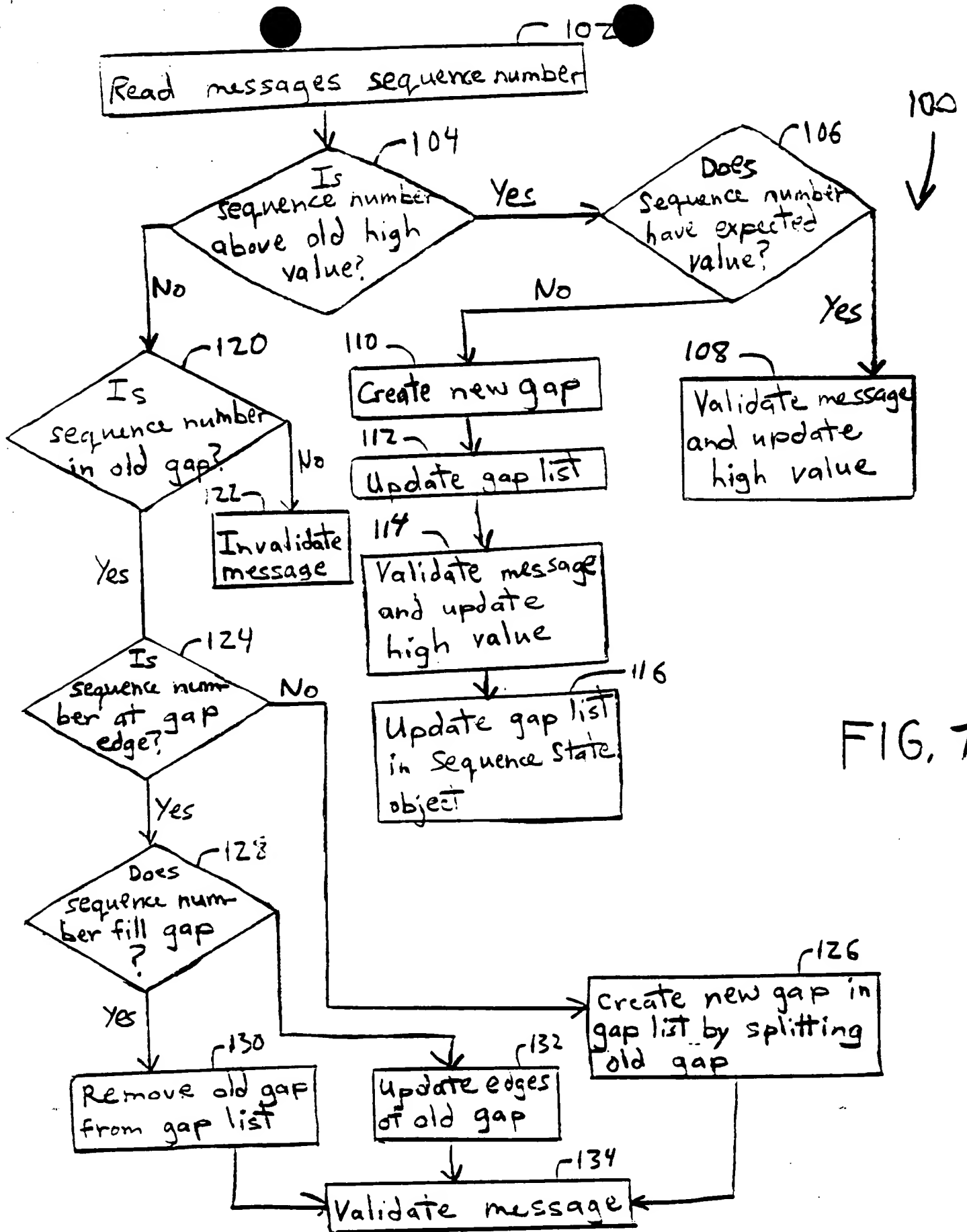
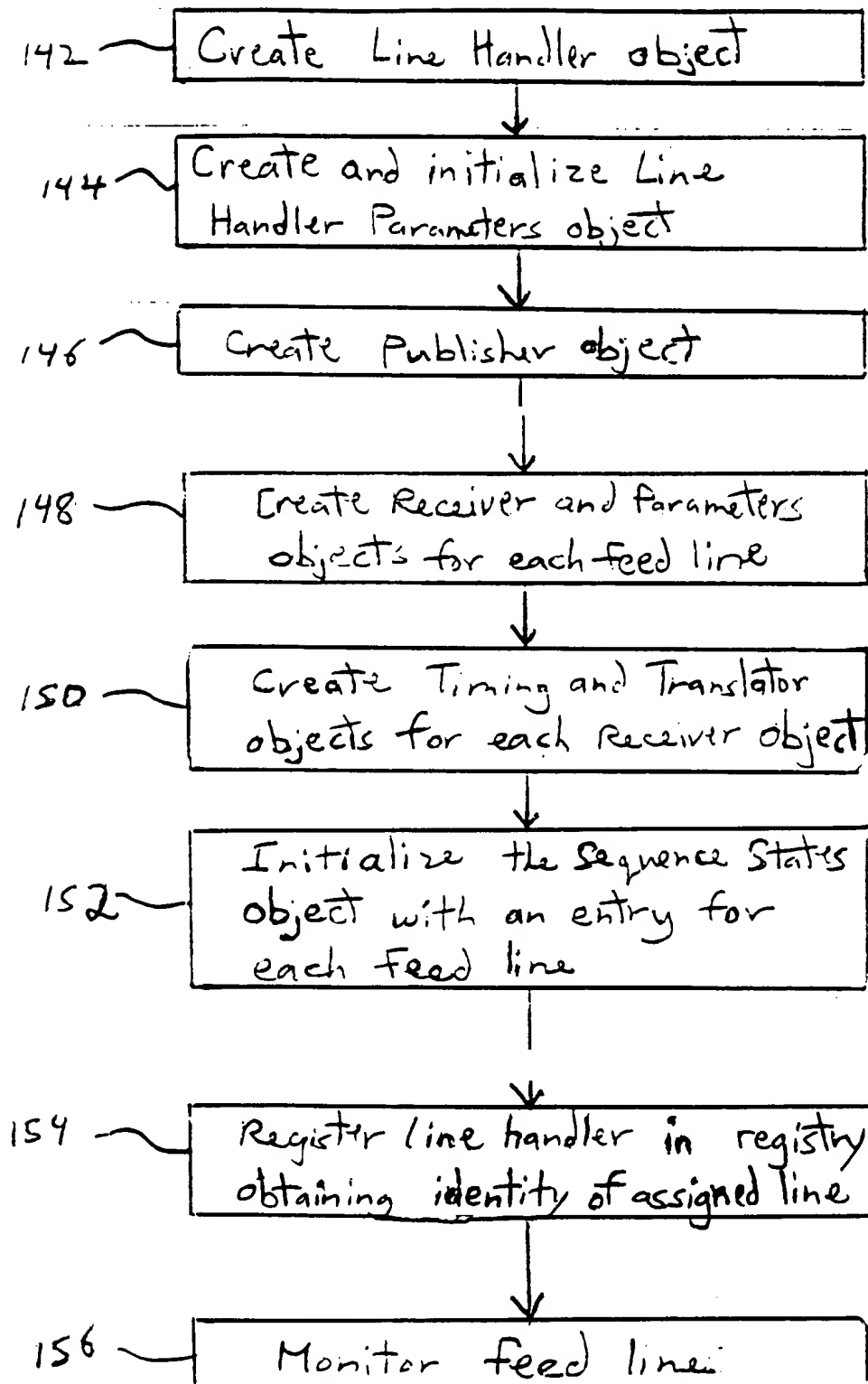


FIG. 7





140  
↓

FIG. 8

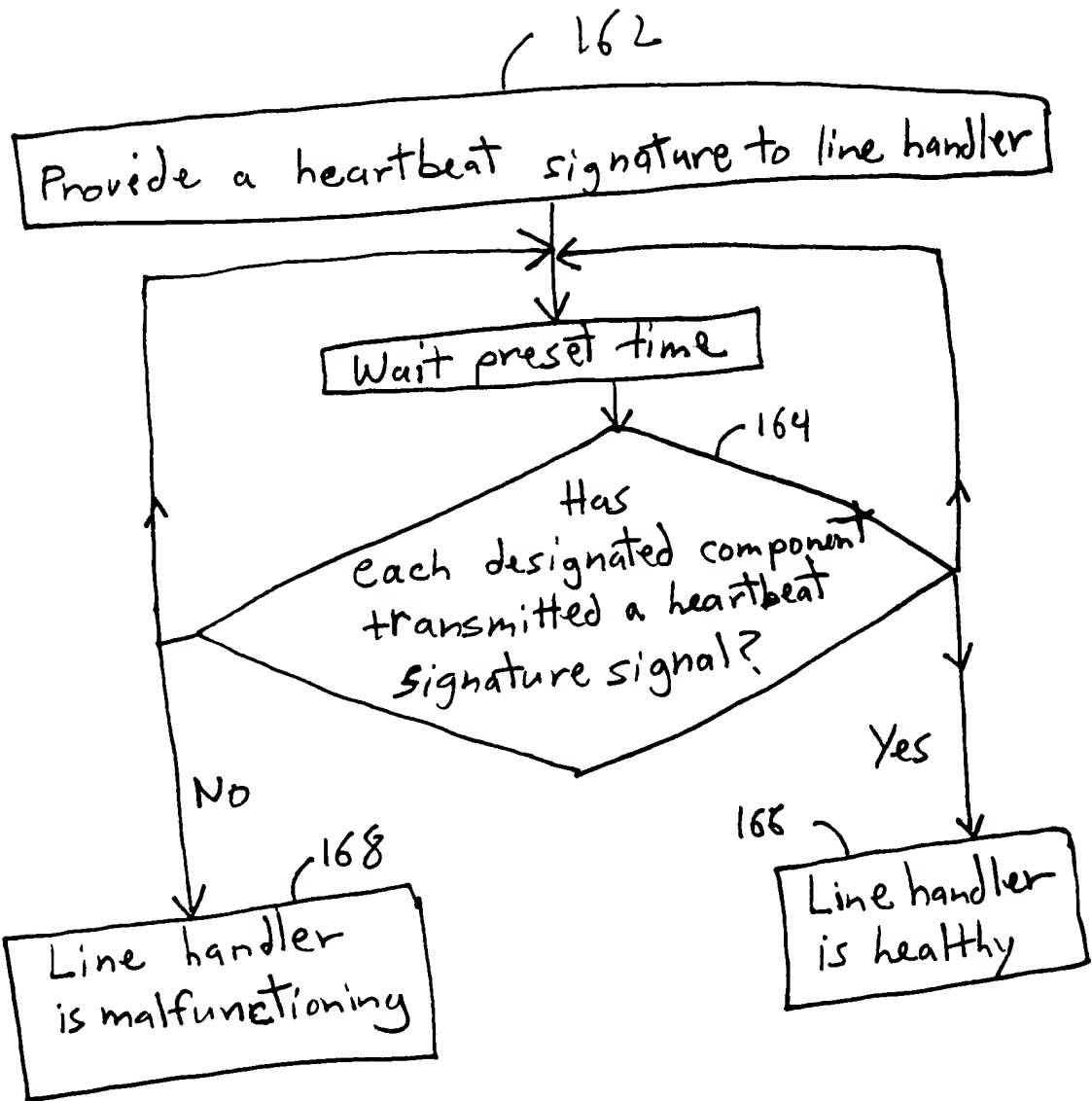


FIG. 9

166

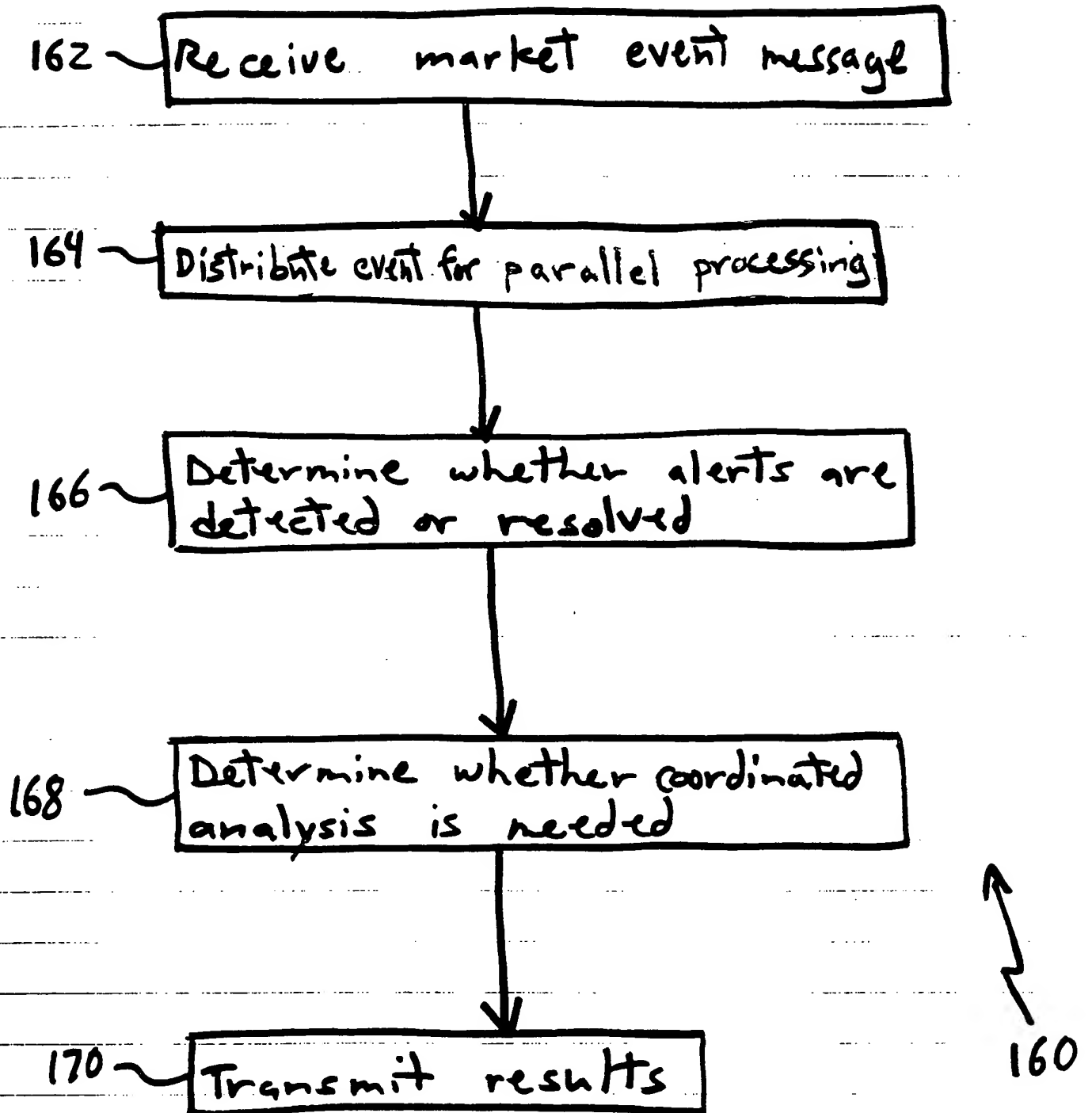
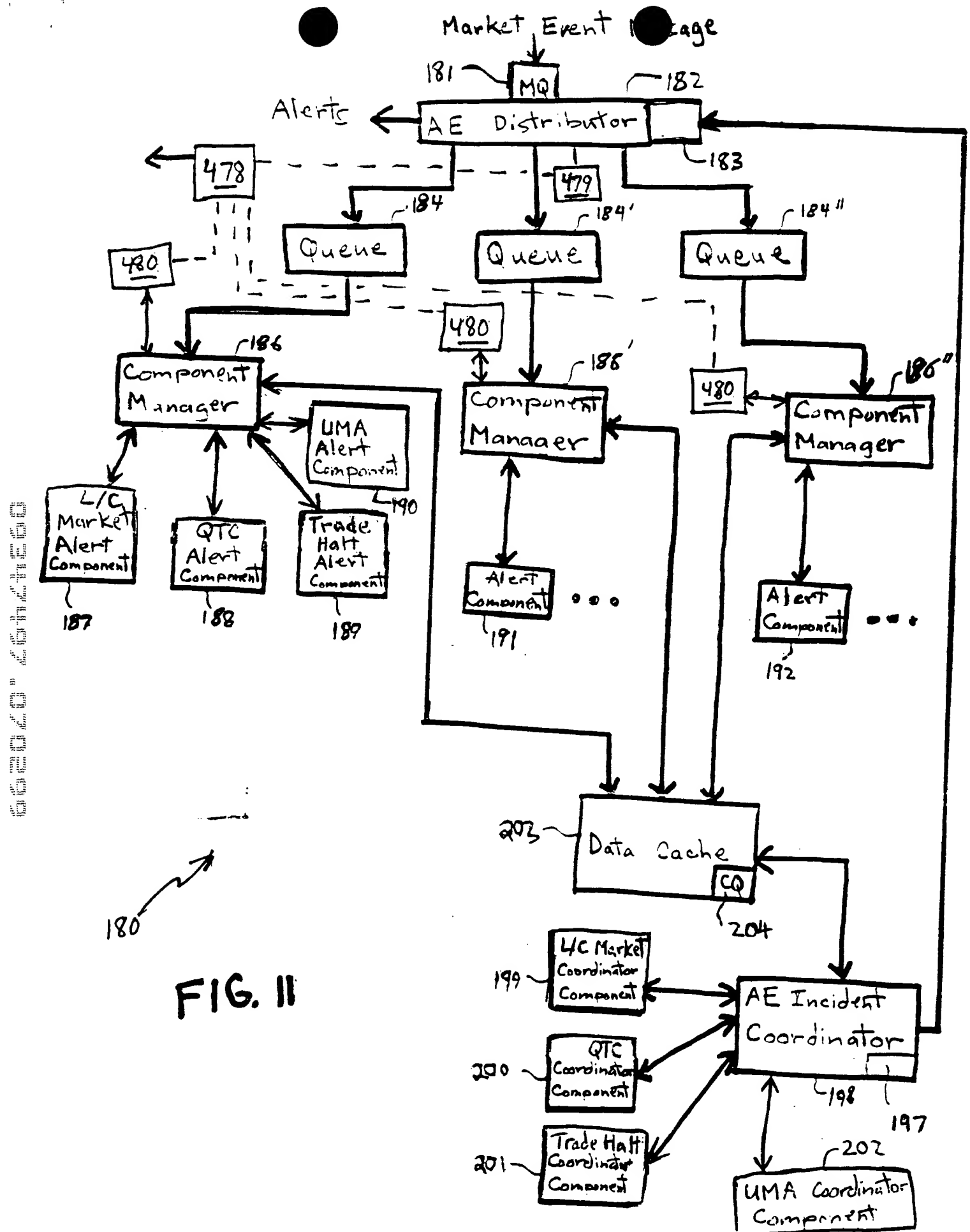
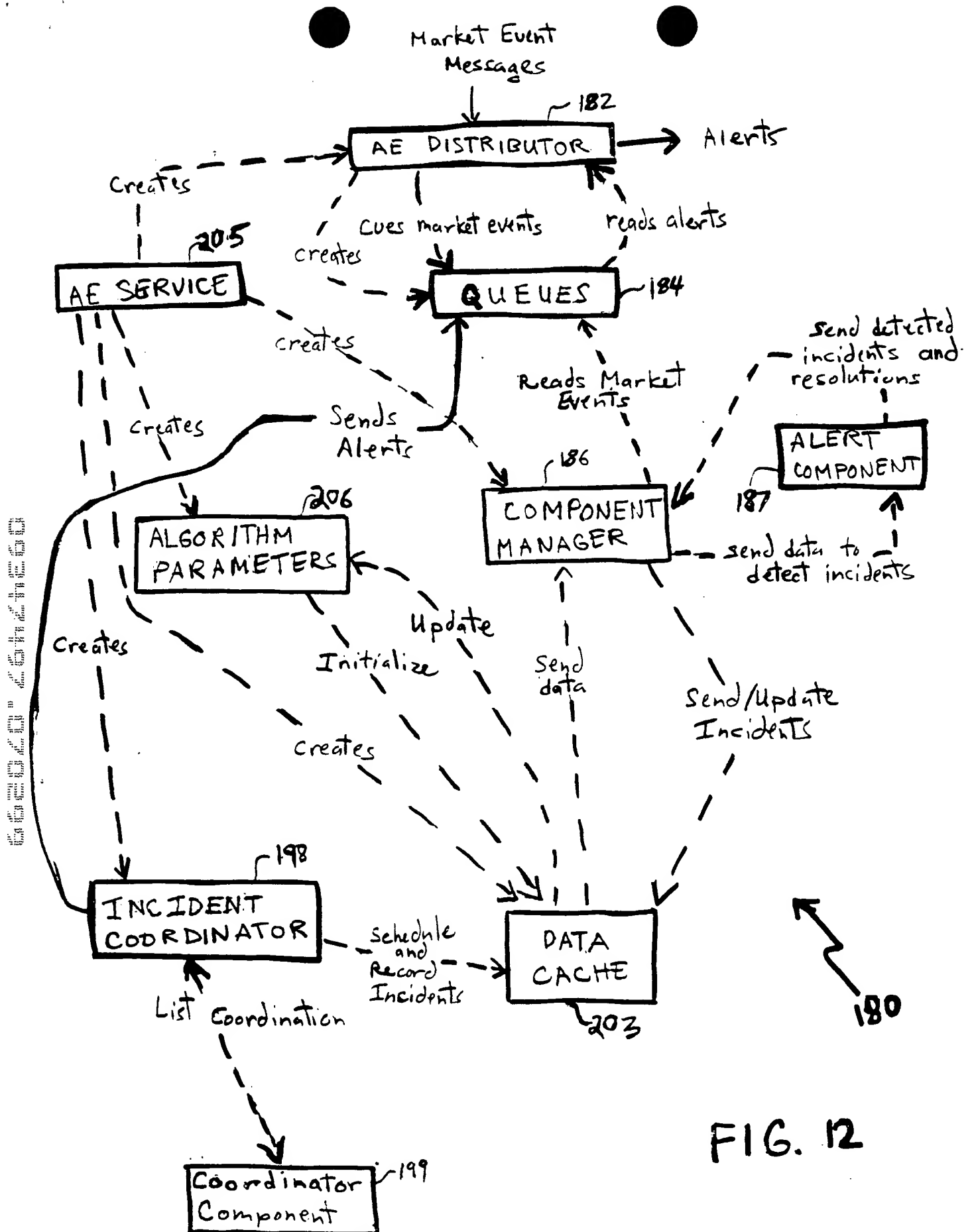


FIG. 10

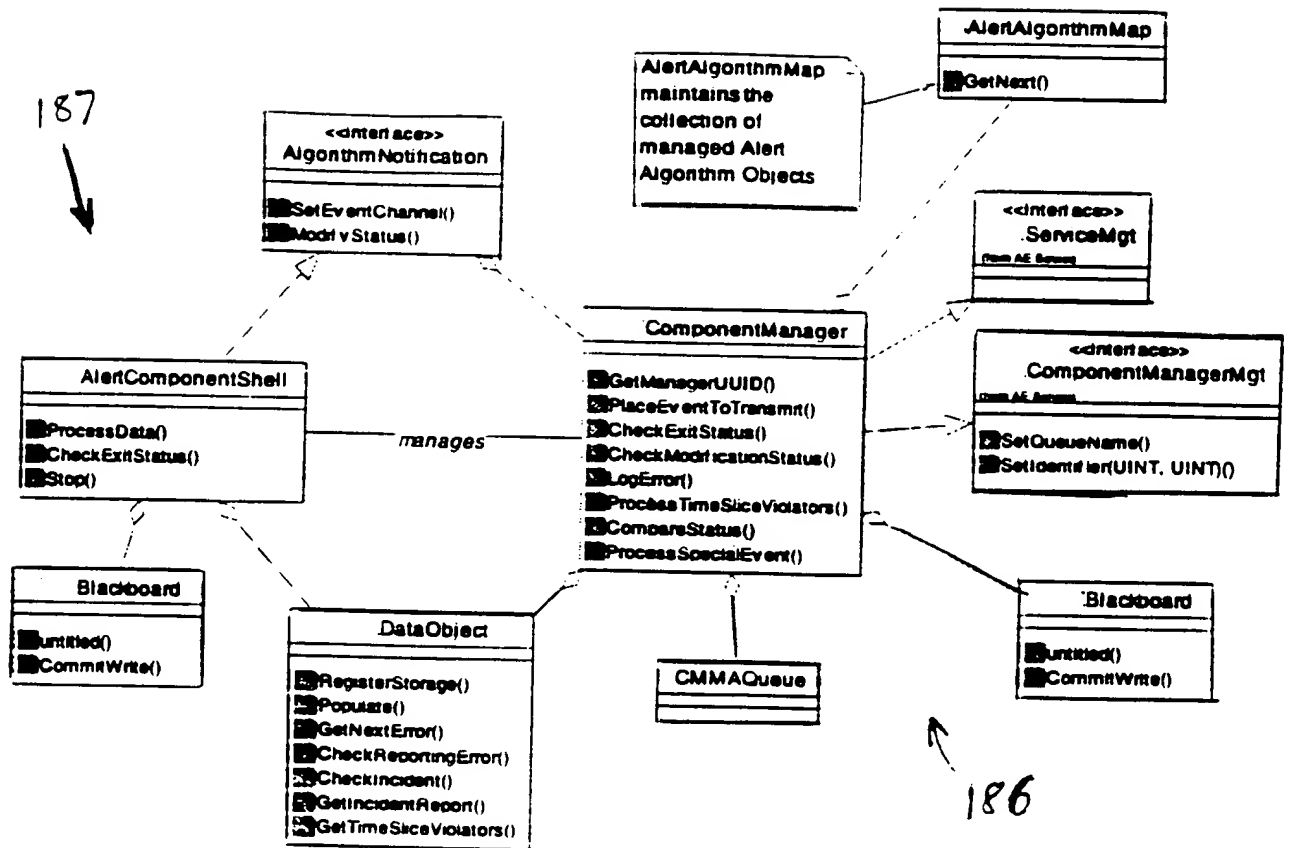




210 ↙

[illegible]

FIG. 13B



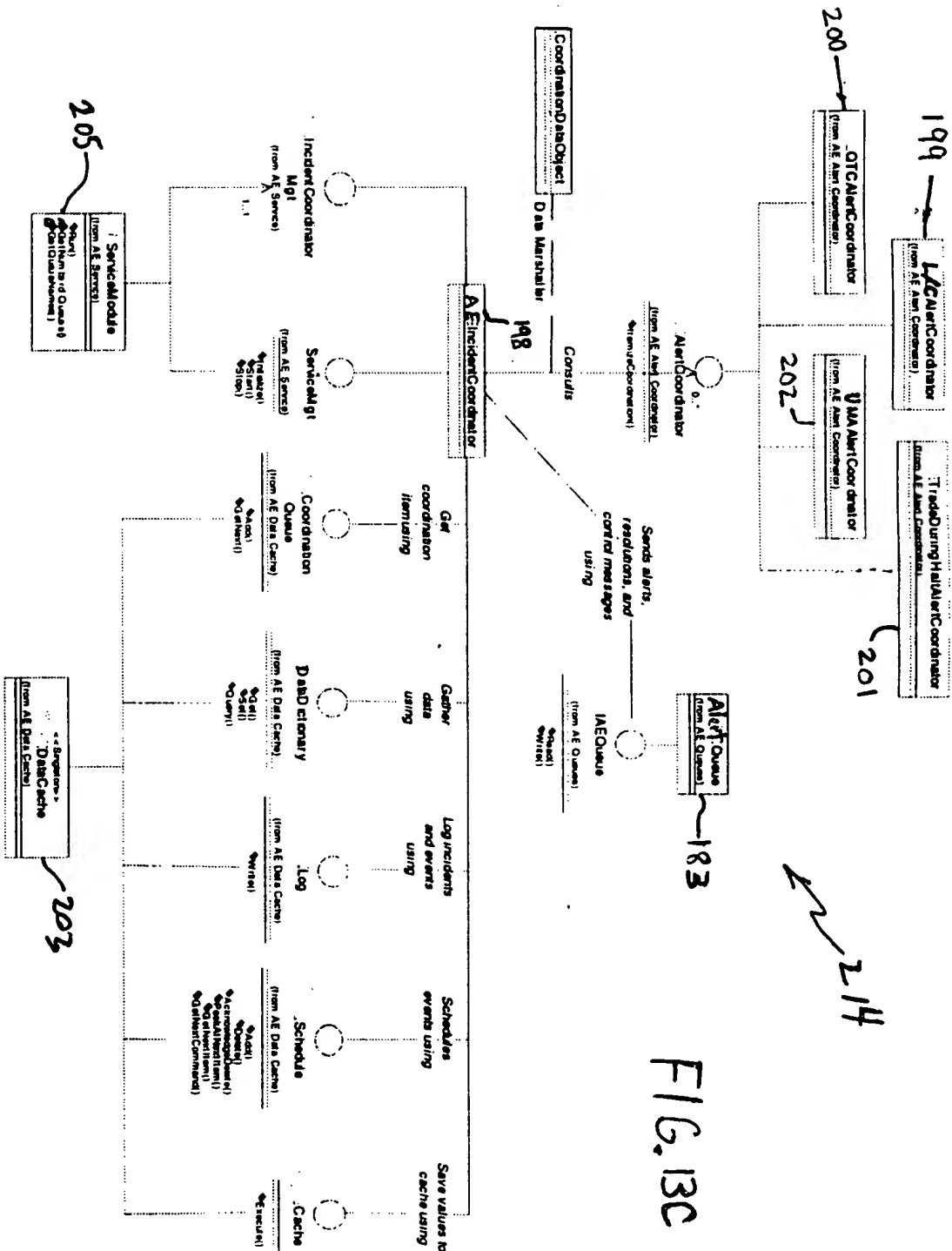
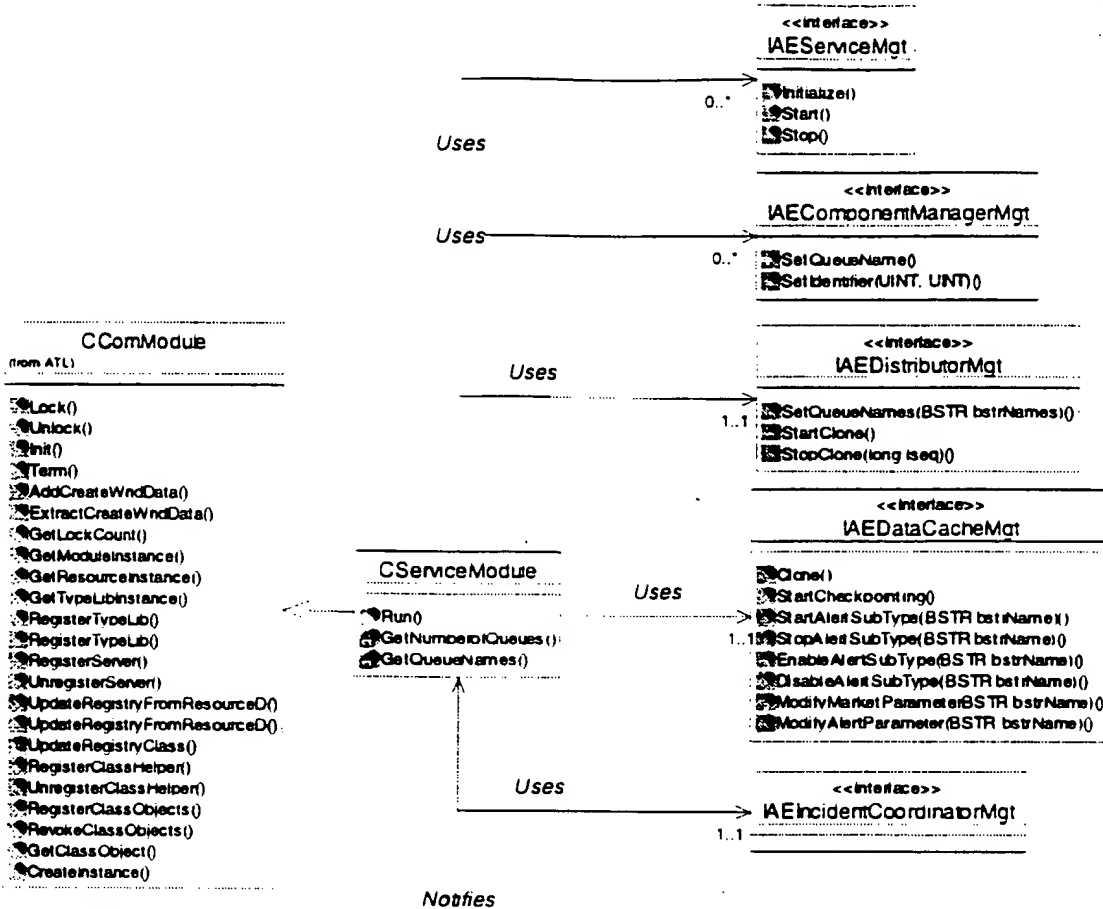


FIG. 13C



216



204

38

CAEApplicationManager  
(from AE Algorithm Parameter)

+Implements

```

<<interface>>
IAEApplicationAdm
(from AE Algorithm Parameter)

GetValue(ID : DWORD, varValue : VARIANT*) : return
SetValue(nID : DWORD, varValue : VARIANT*) : BOOL
GetParameterTable(bstrAlgoName : BSTR, bstrTable : BSTR*) : BOOL
GetAlgorithmTable(bstrAlgorithmTable : BSTR*) : BOOL
Start(argname) : return
Stop(argname) : return
Clone(argname) : return
Checkpoint(argname) : return
  
```

CComObjectRootEx<class CComSingleThreadModel>  
(from ATL)

```

T, piid,
piibid, w
DispatchImpl
(from ATL)

DispatchImpl()
-DispatchImpl()
SGetTl()
GetTypeInfo()
GetIDsOfNames()
Invoke()
GetTypeInfoCount()
  
```

```

T, piid
CComCoClass
(from ATL)

SGetObjectDescription()
SGetObjectCLSID()
SError()
SError()
SError()
SError()
SError()
SError()
  
```

FIG. 13D

242 Receive market event message from line handler

240 ⚡  
244 Determine issue and sequence number of received message

246 Is new number duplicate of old highest number?  
Yes → 248 Discard

FIG. 14

250 Is message next expected message?  
Yes → 252 Distribute message to queue for the message issue

No  
254 Is message higher than expected message?  
Yes → 256 Distribute message and data on new gap to queue

258 Is message in old gap?  
Yes → 260 Distribute message and modification to old gap to queue  
No → 264 Message is duplicate — discard

262 Update gap list in data cache

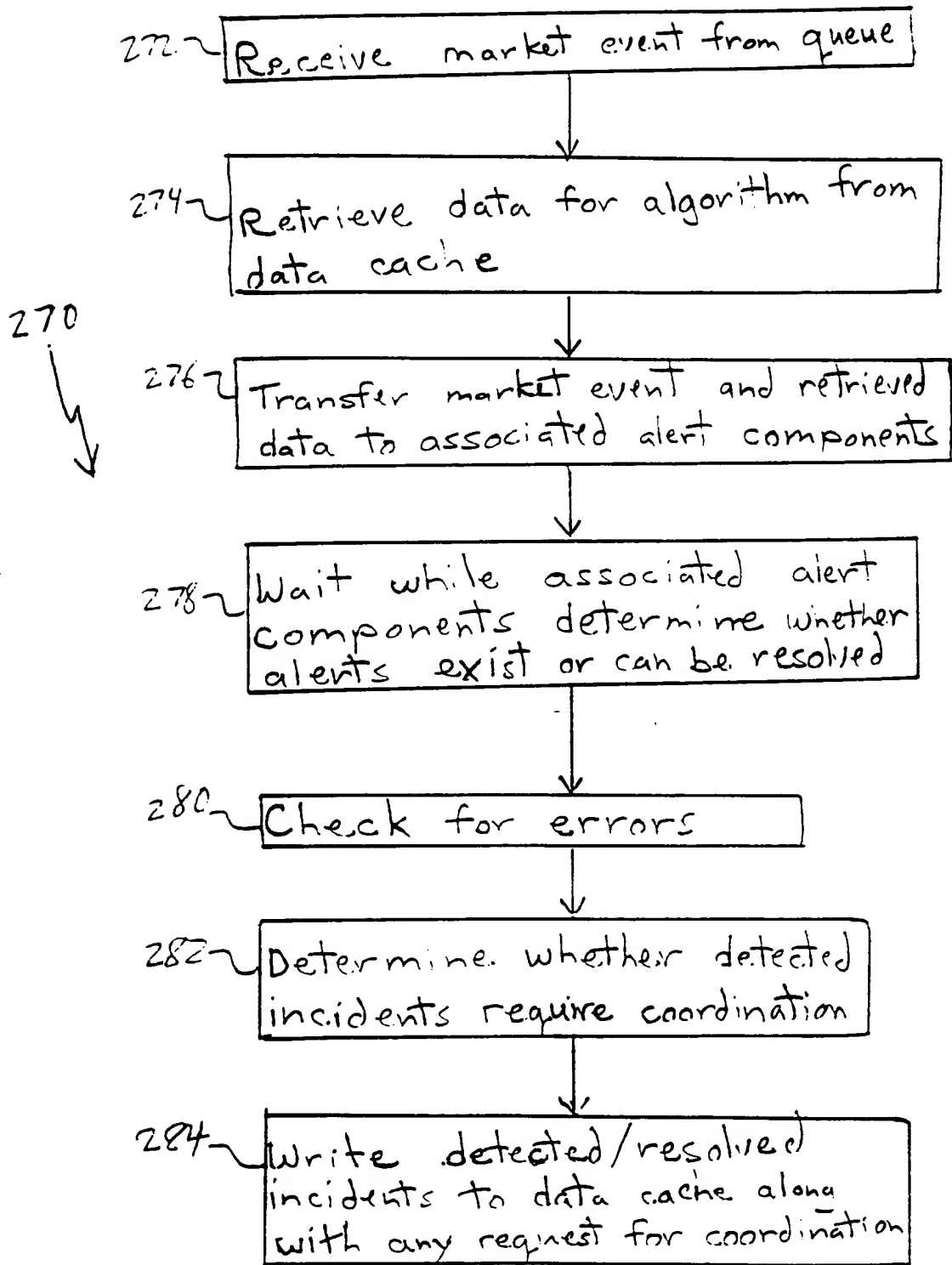


FIG. 15

290 292 294 296 298 300 302 304 306 308 310

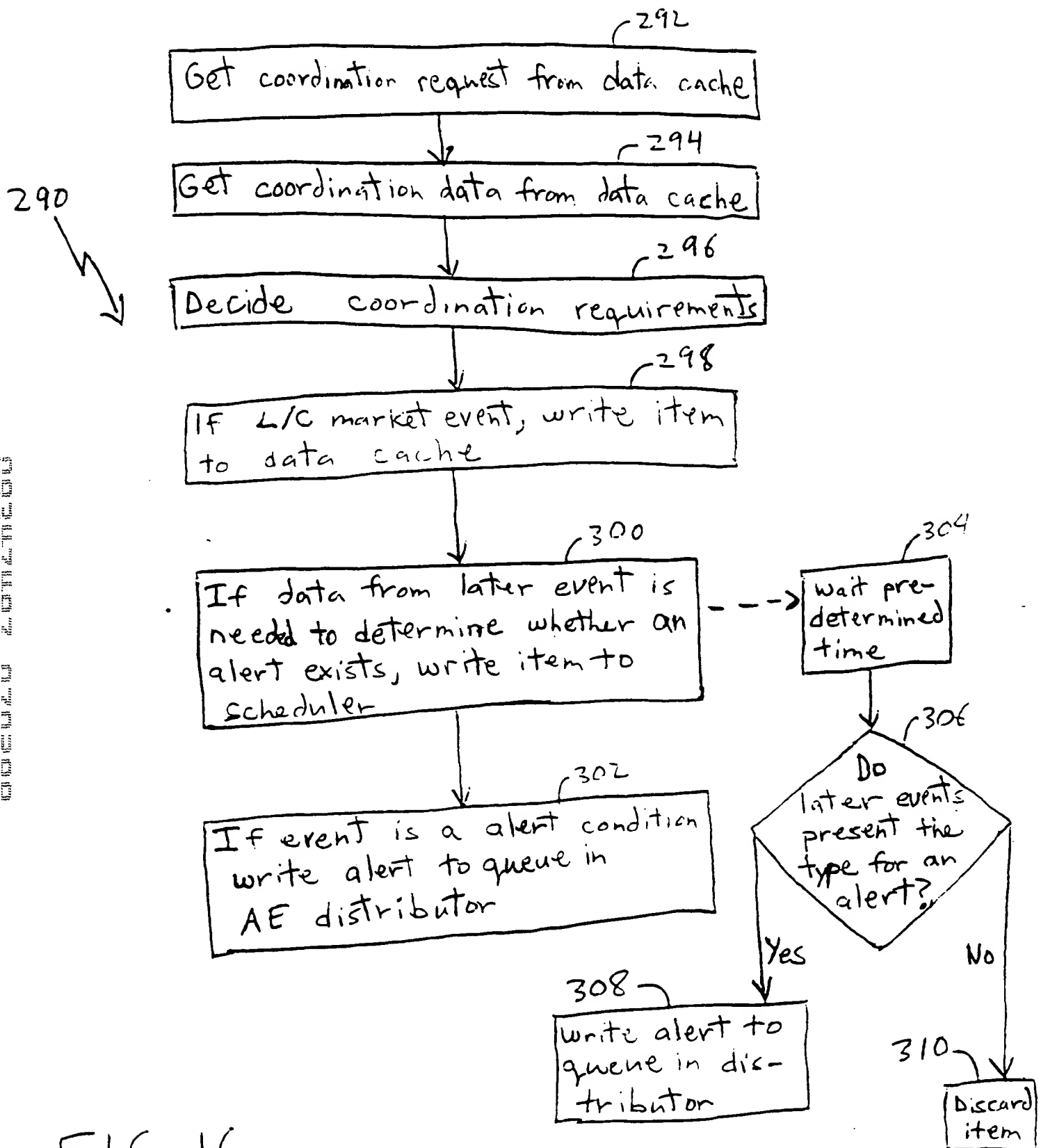
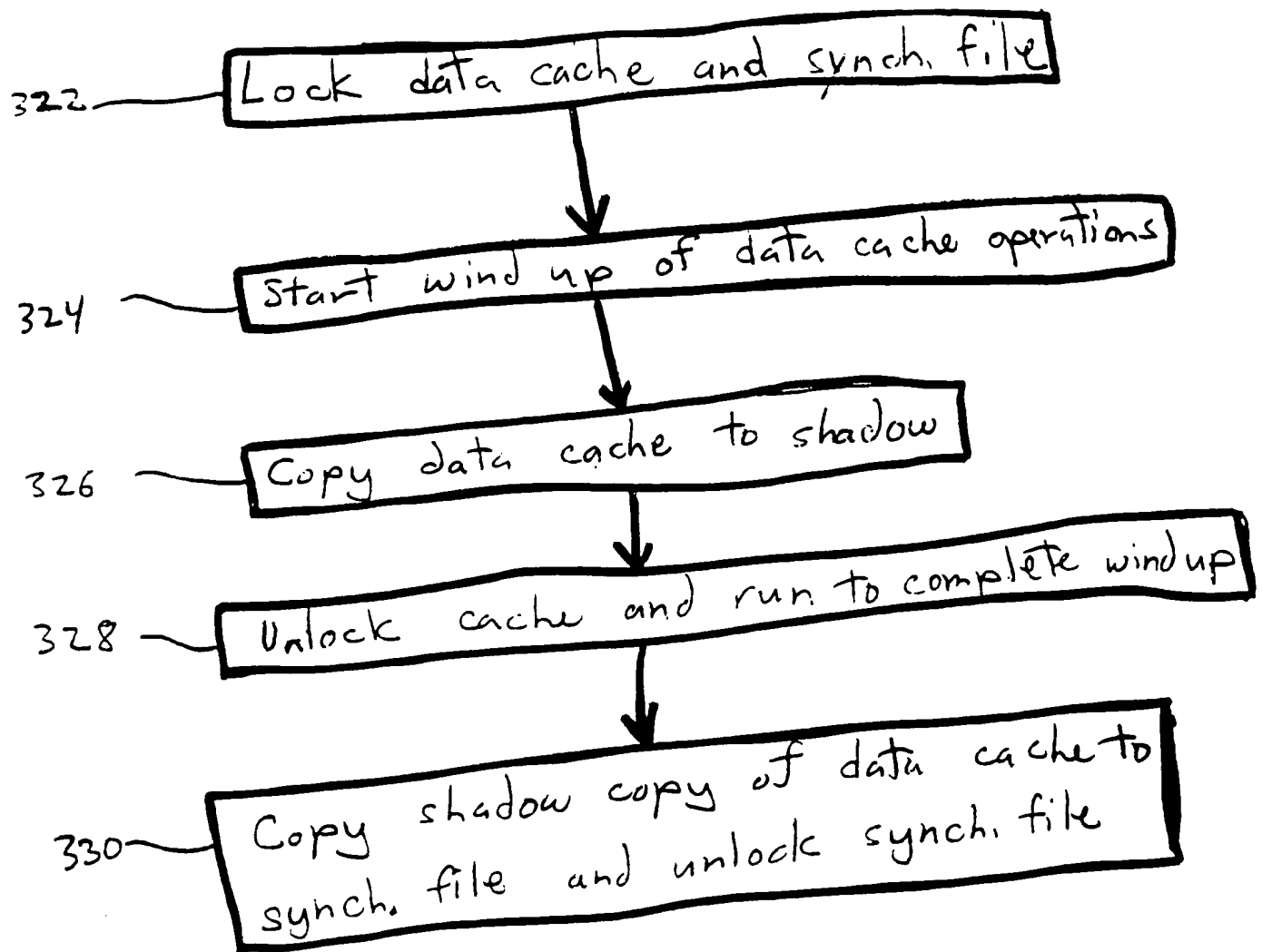


FIG. 16



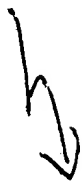
320

FIG. 17A

Start capturing market event messages in new alert engine 333

Lock sync file and data cache of running alert engine 334

332



Transfer data from sync file to new alert engine 335

Initialize data cache of new alert engine with transferred data 336

Unlock sync file 337

Process overdue jobs in 338

Unlock data caches 339

Synchronize next event from queue 340

Start incident coordinator and component managers 341

FIG. 17B

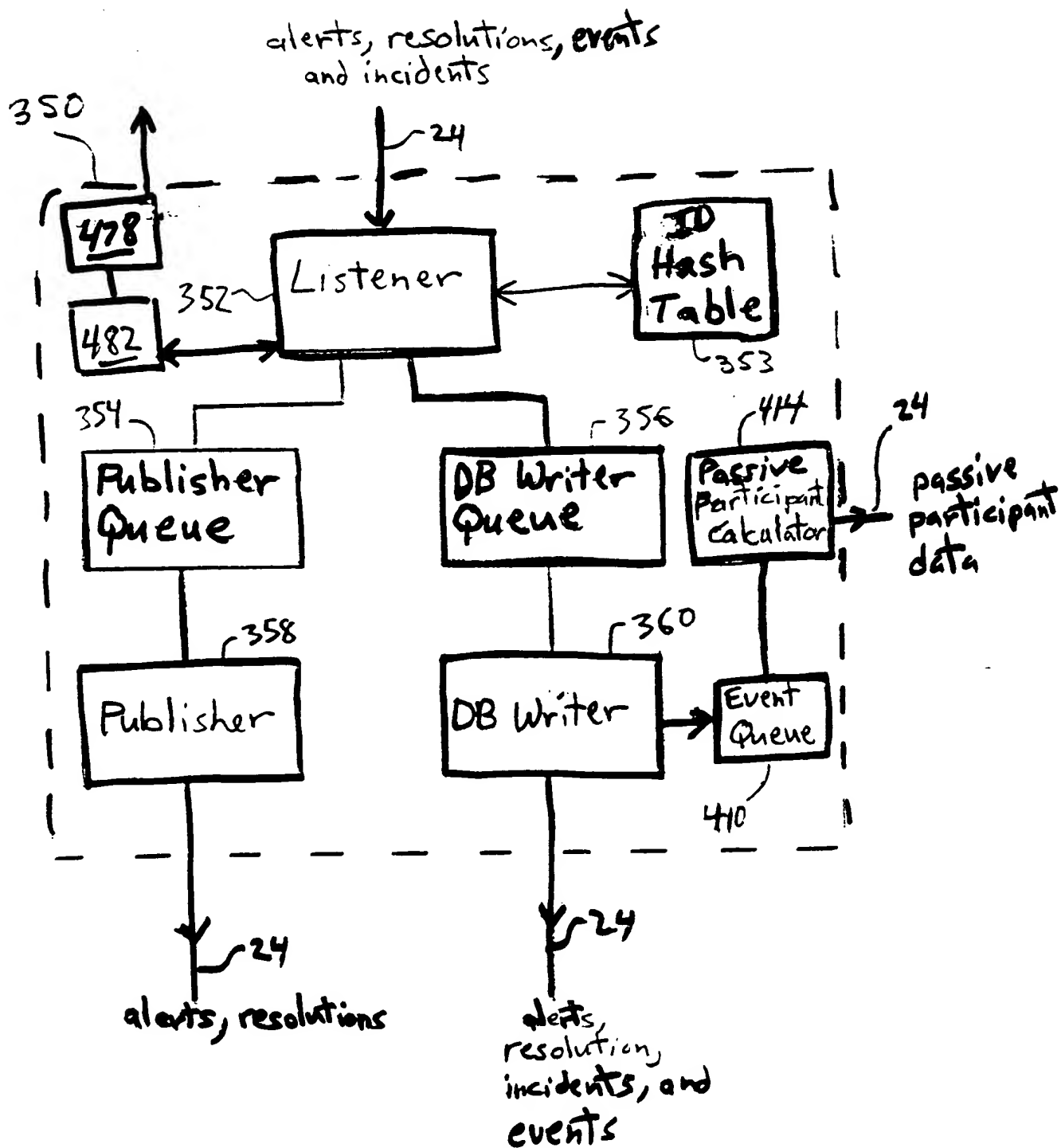
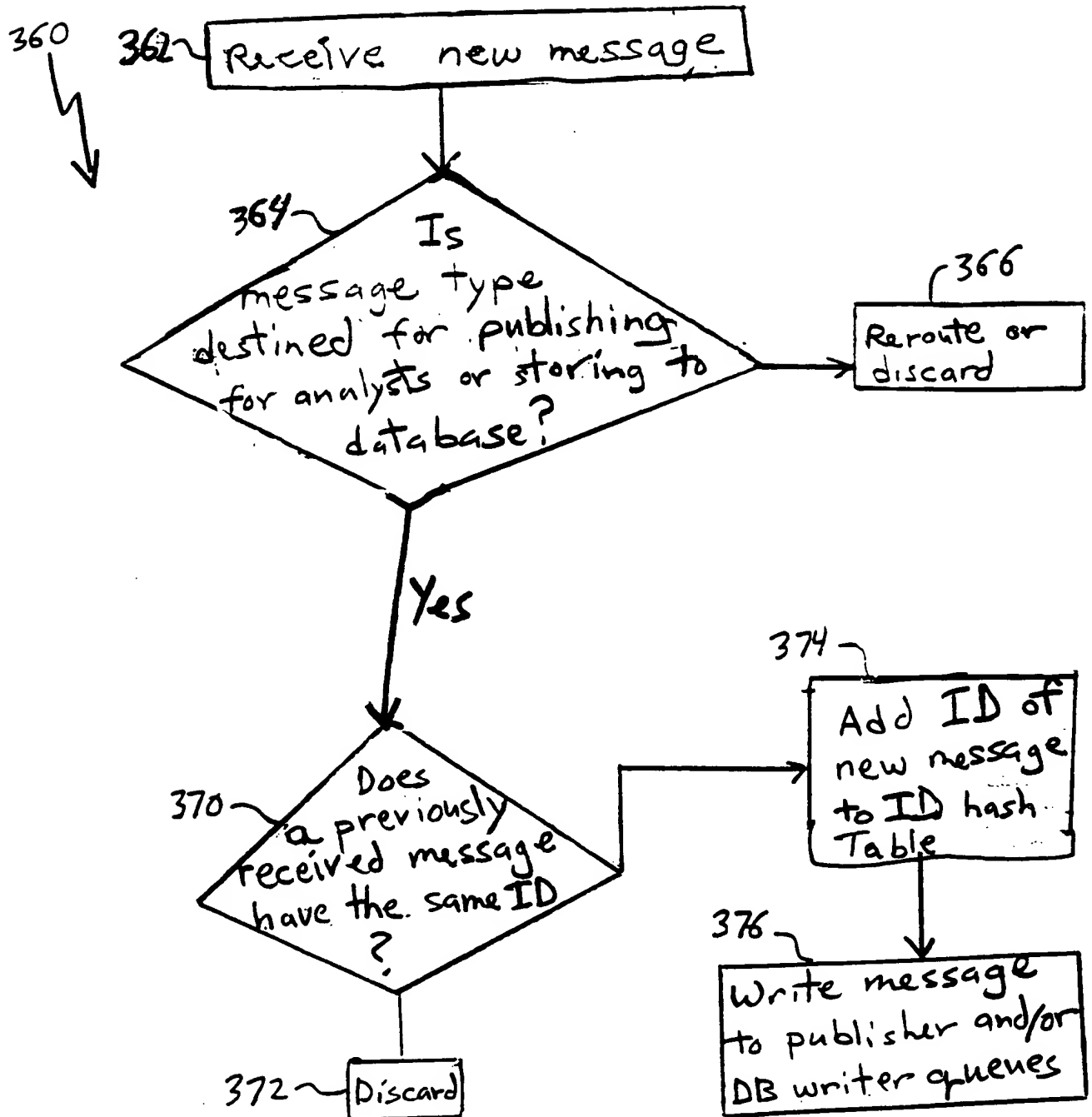
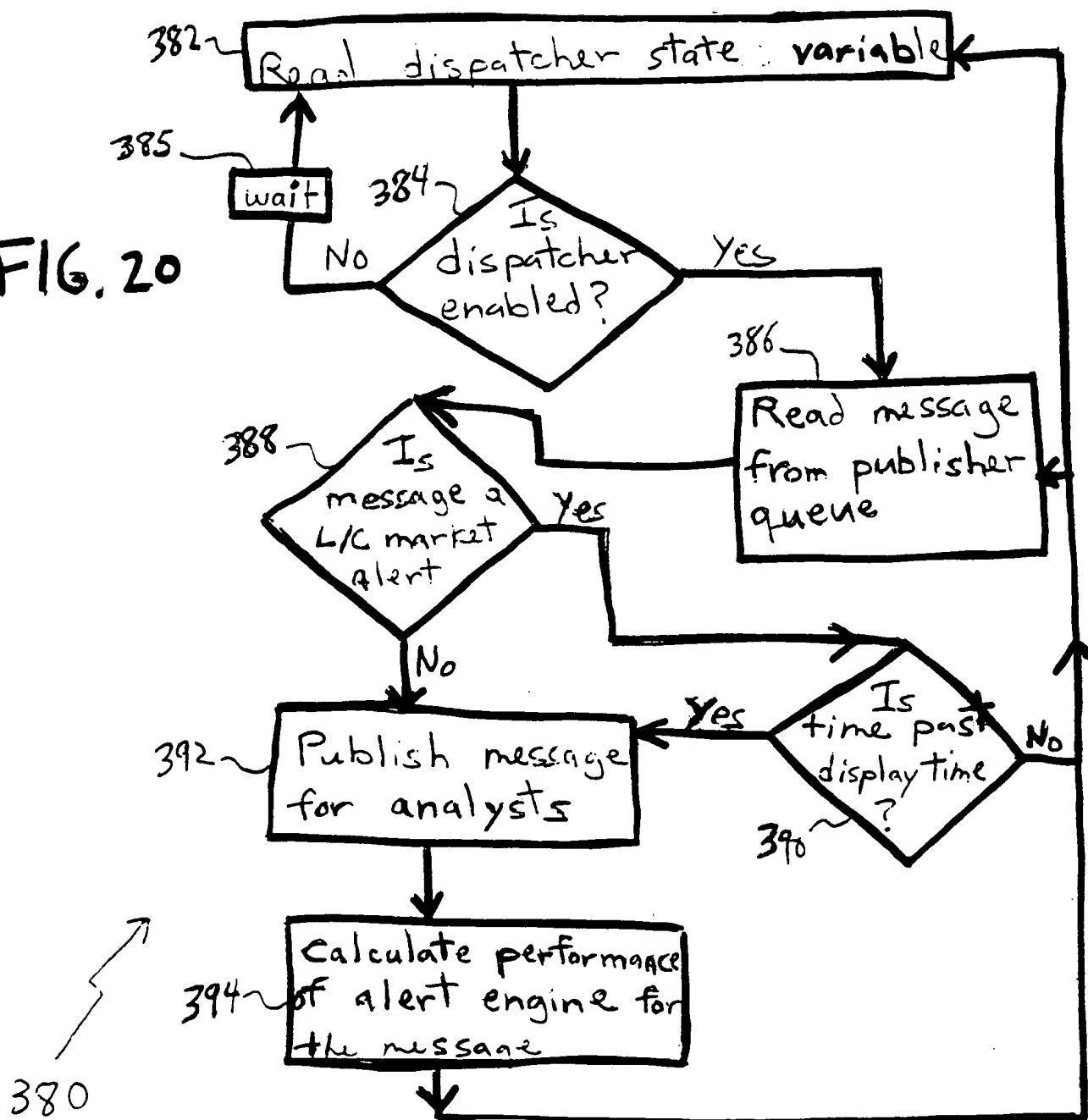


FIG. 18

FIG. 19





[illegible]

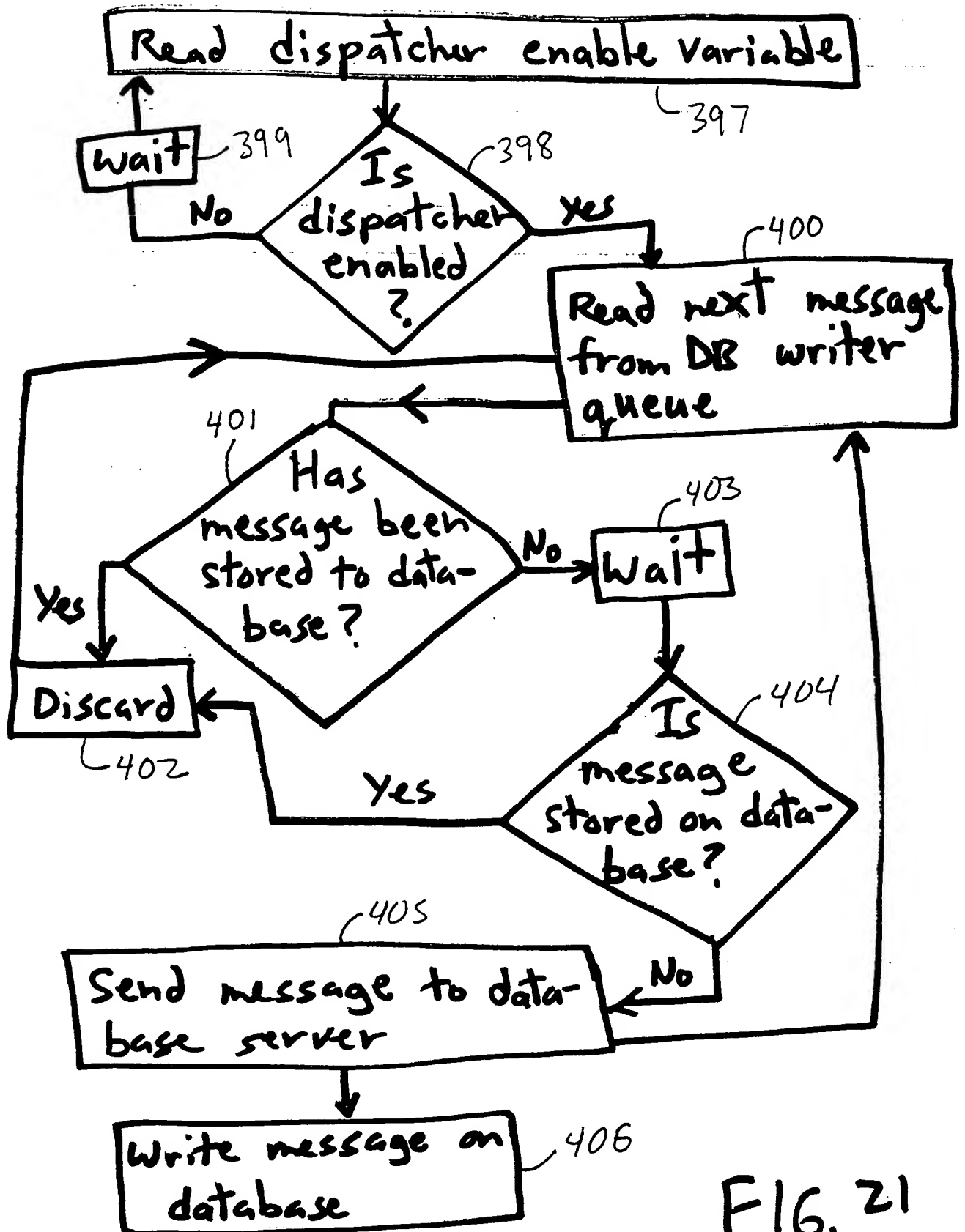


FIG. 21

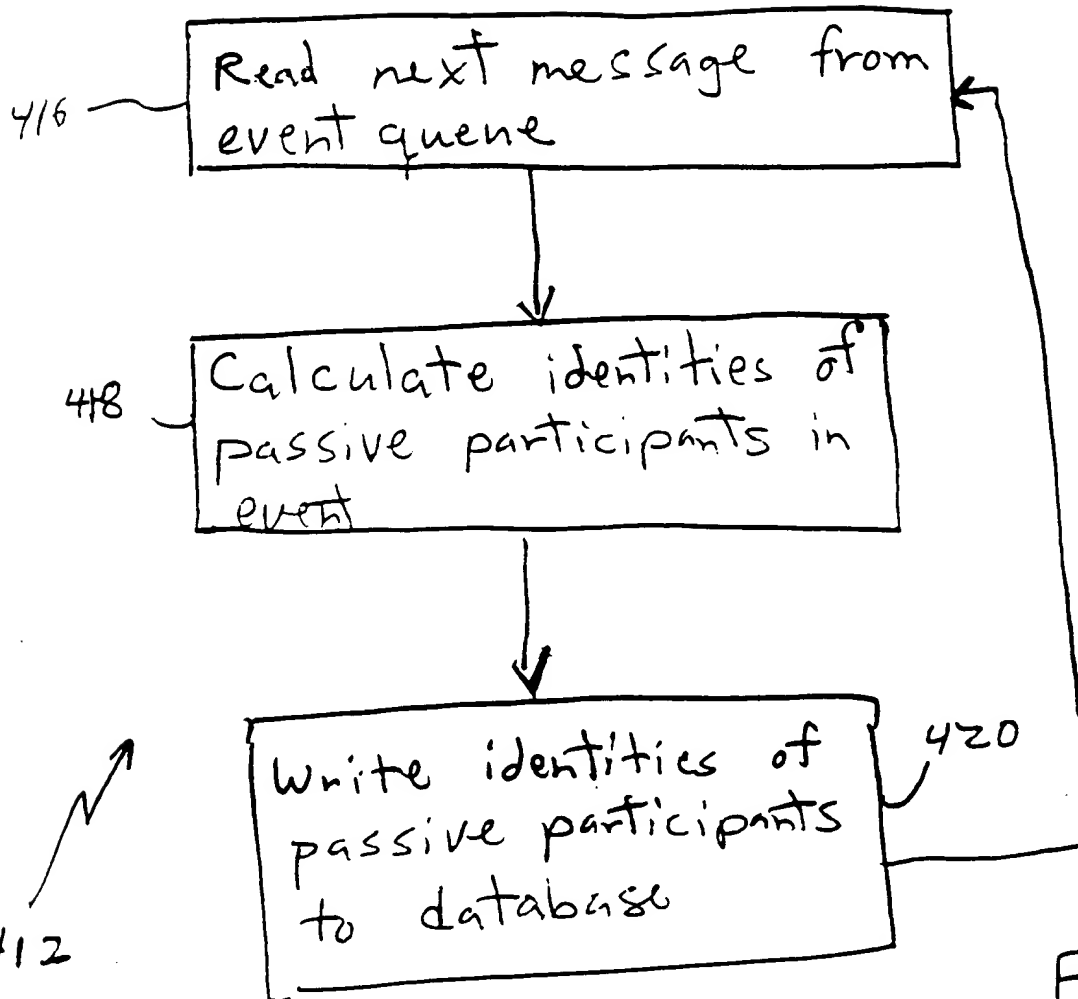
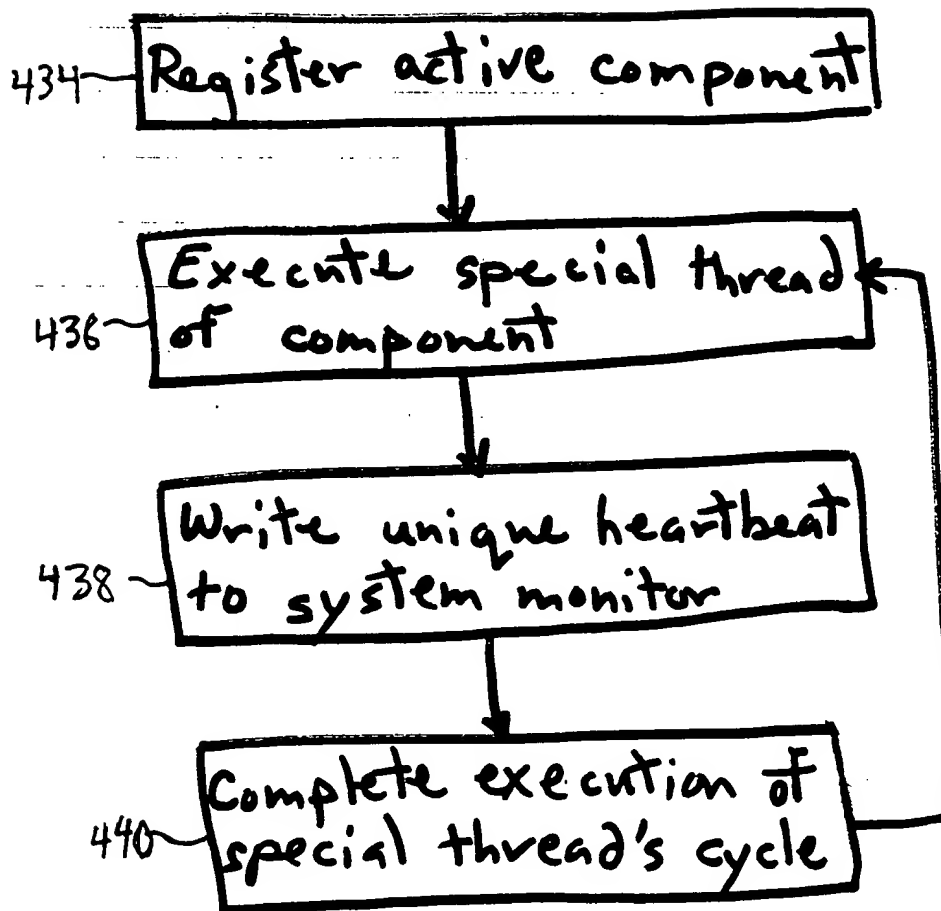


FIG. 22



432

FIG. 23

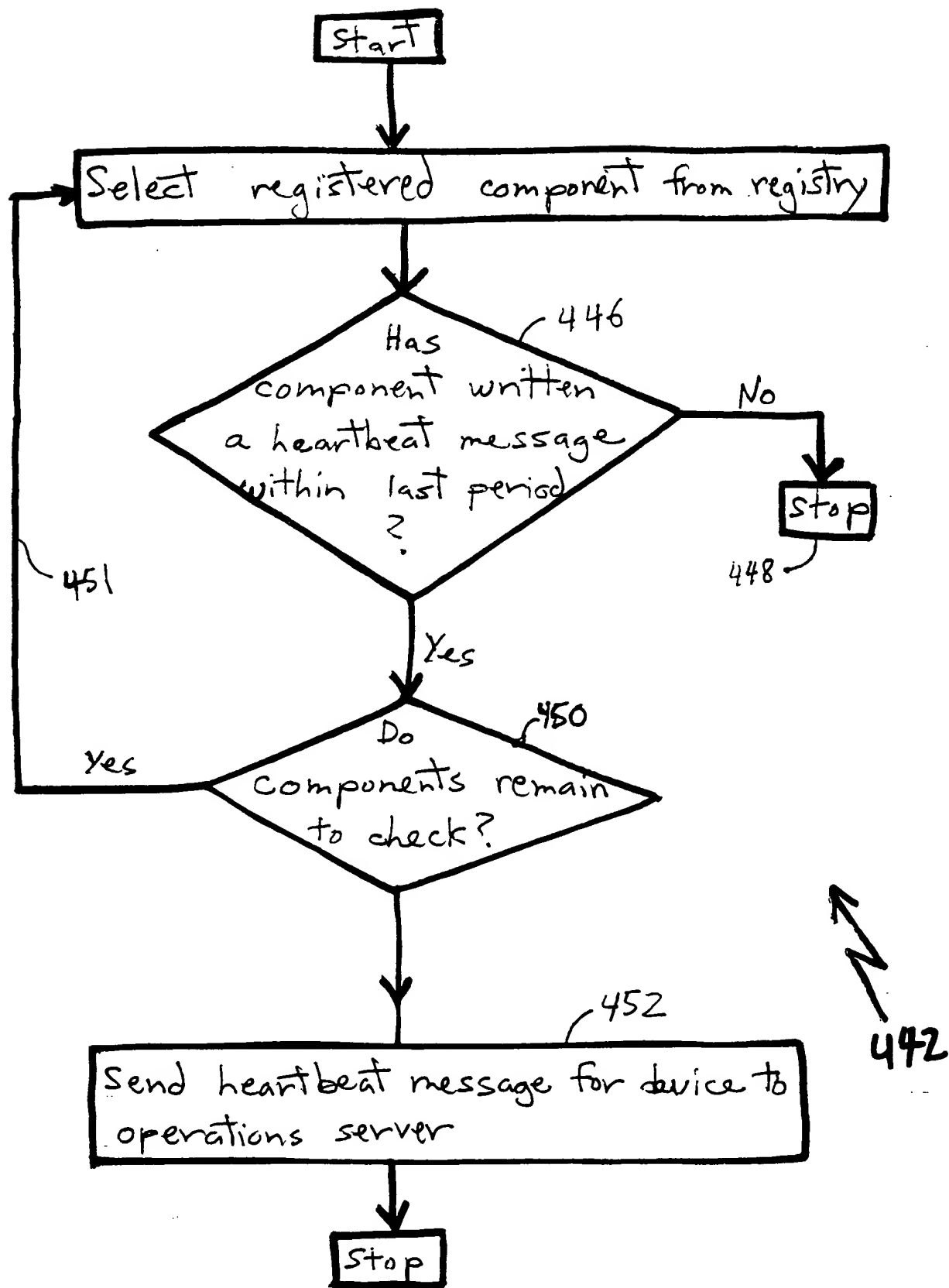


FIG. 24

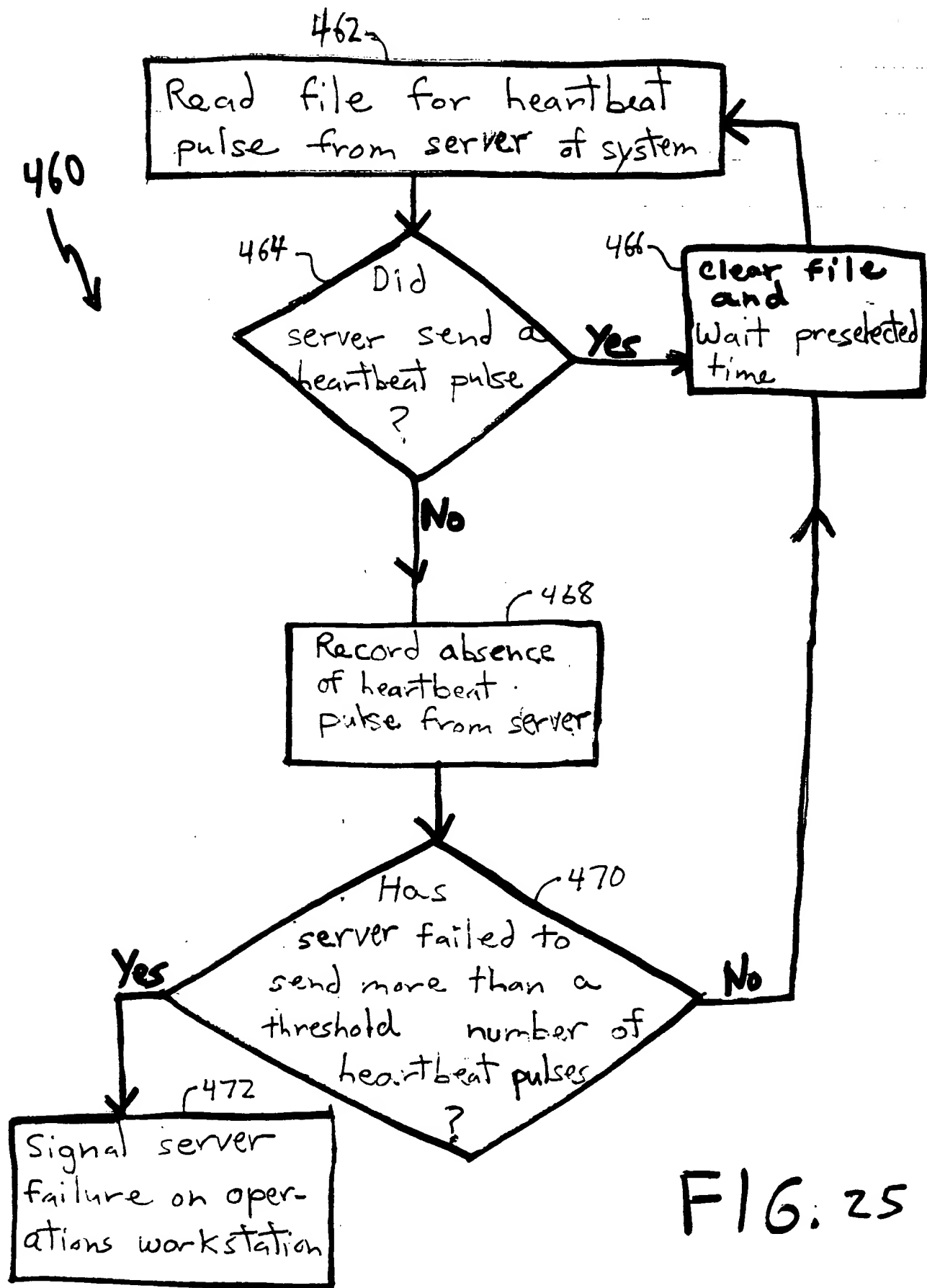
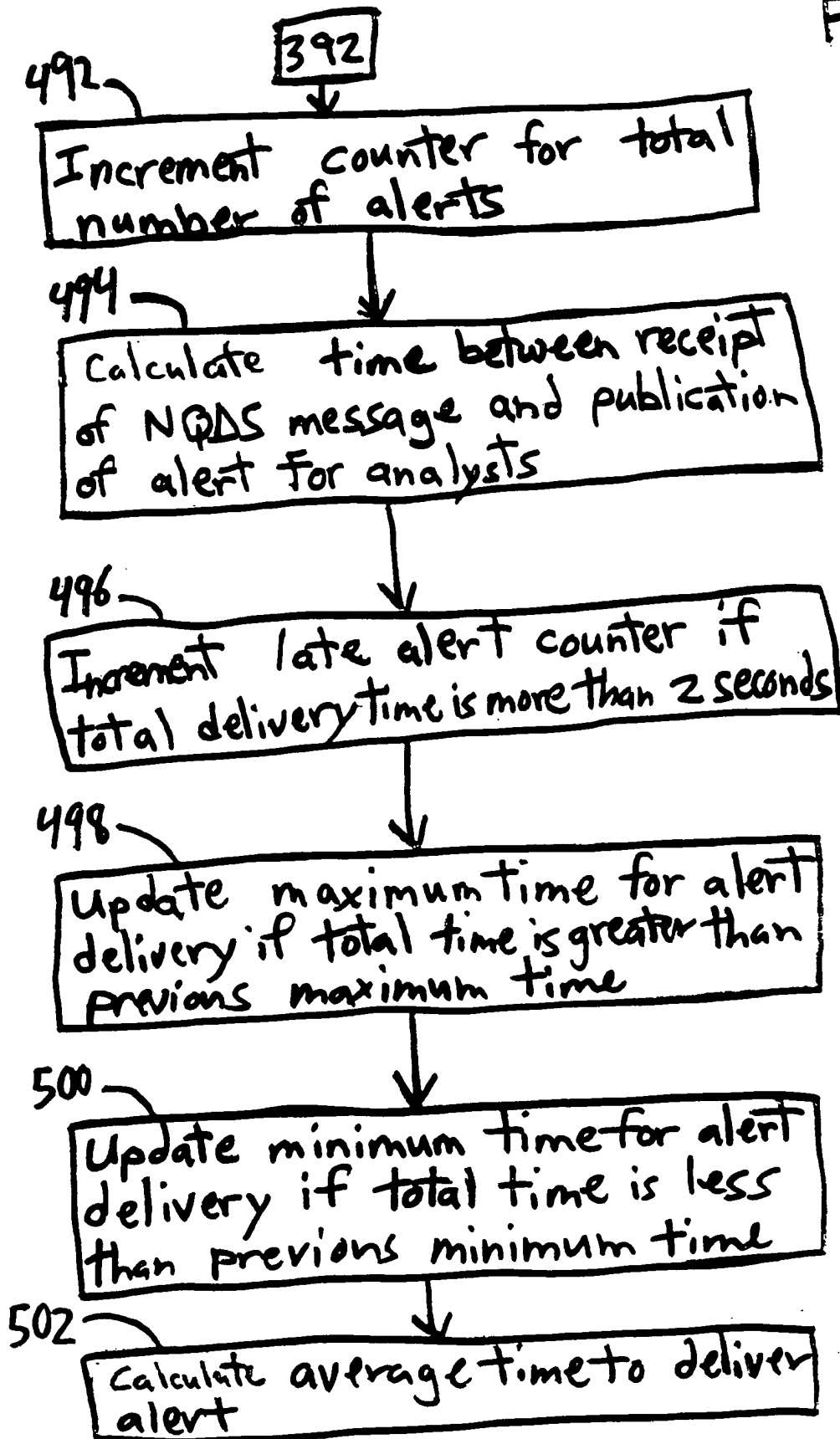


FIG. 25

FIG. 26



66323 45424260

490

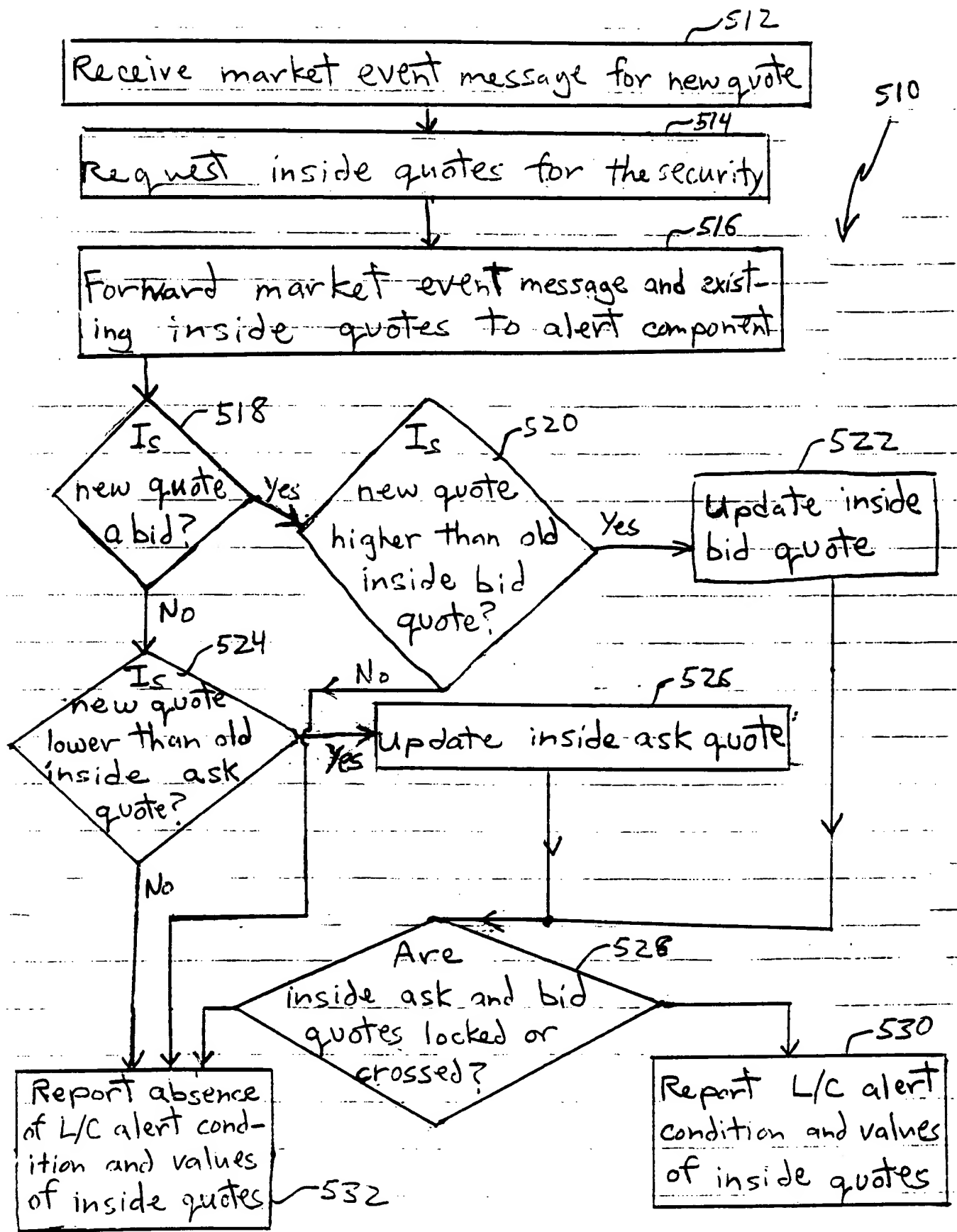


FIG. 27



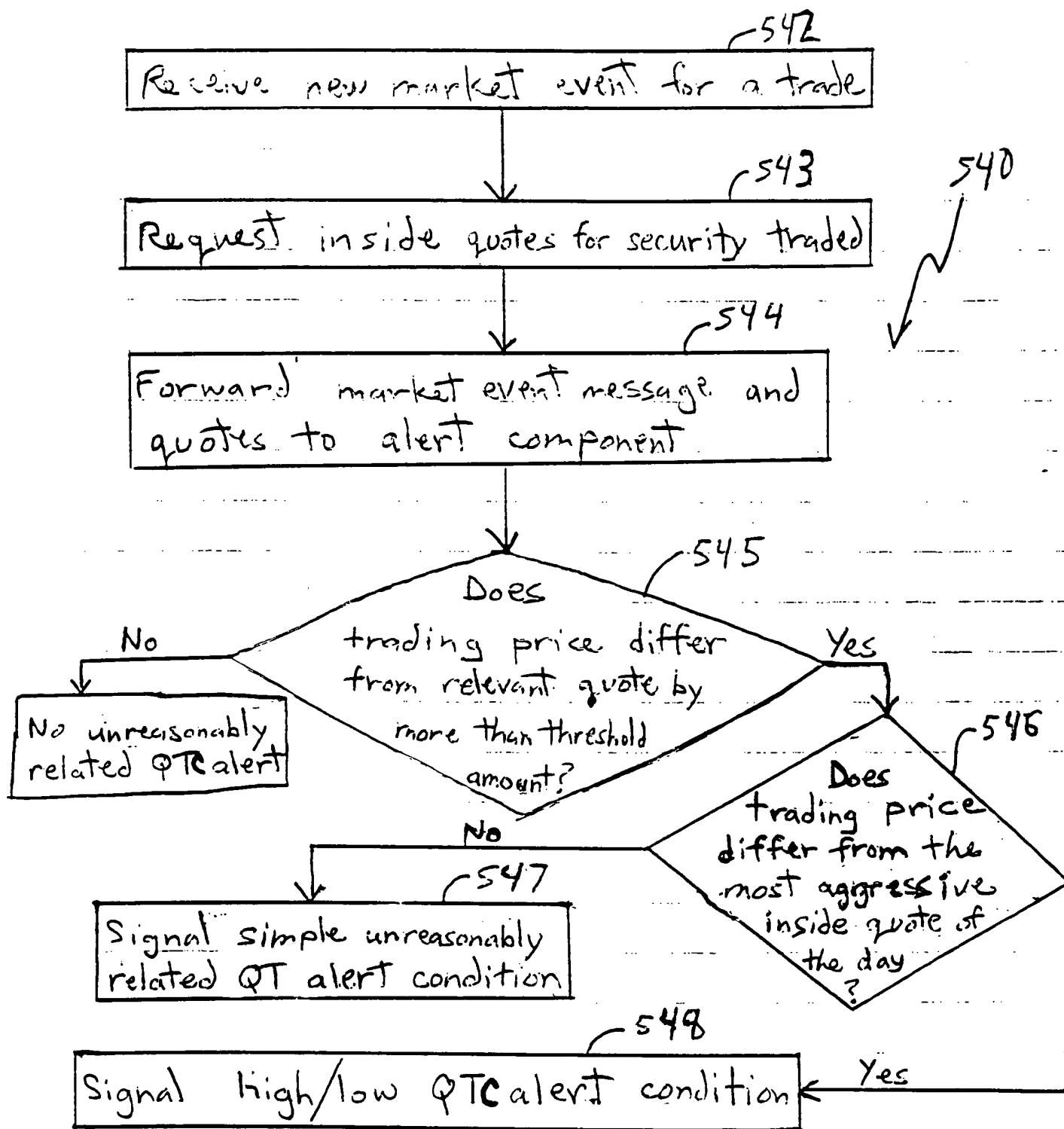


FIG. 28

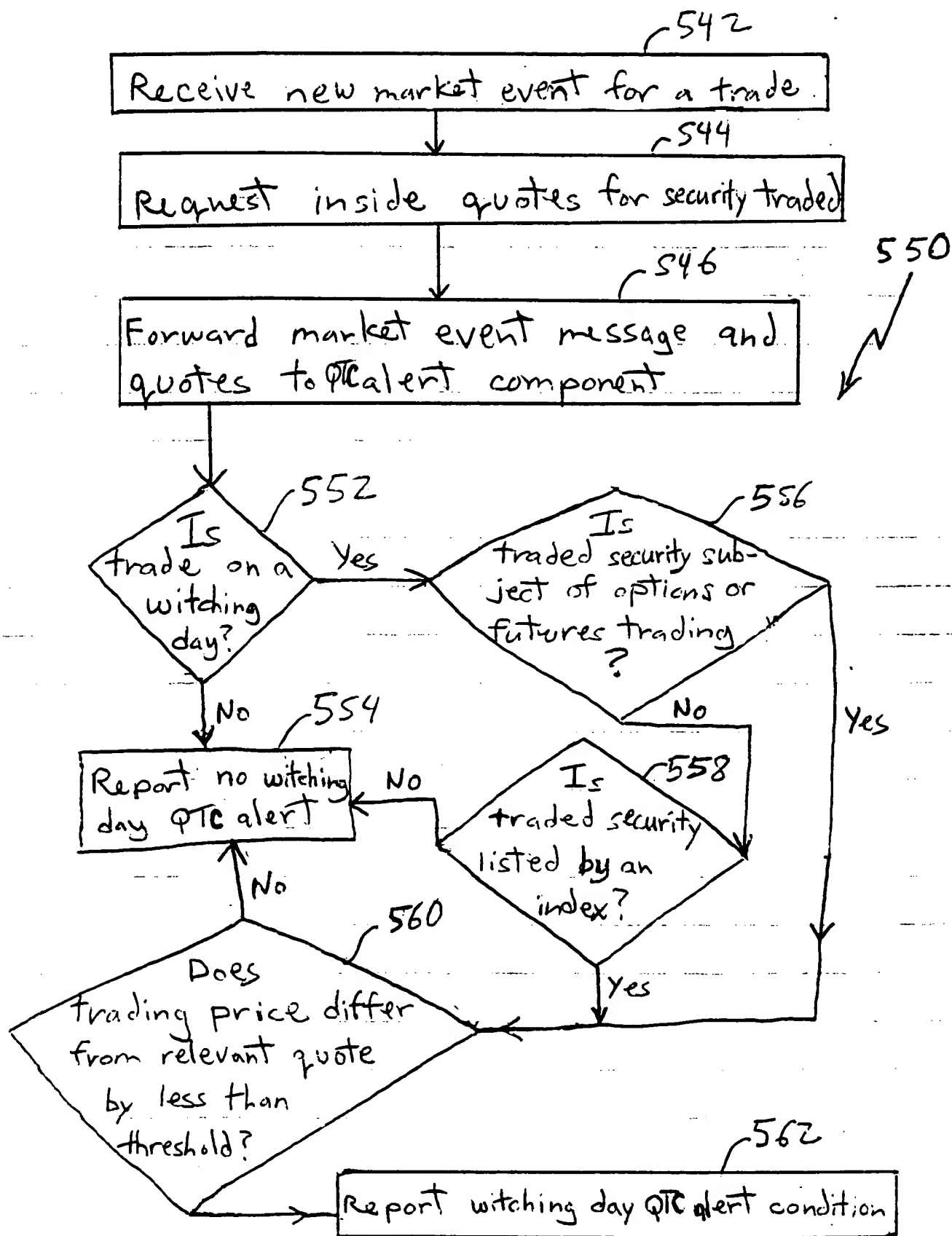


FIG. 29

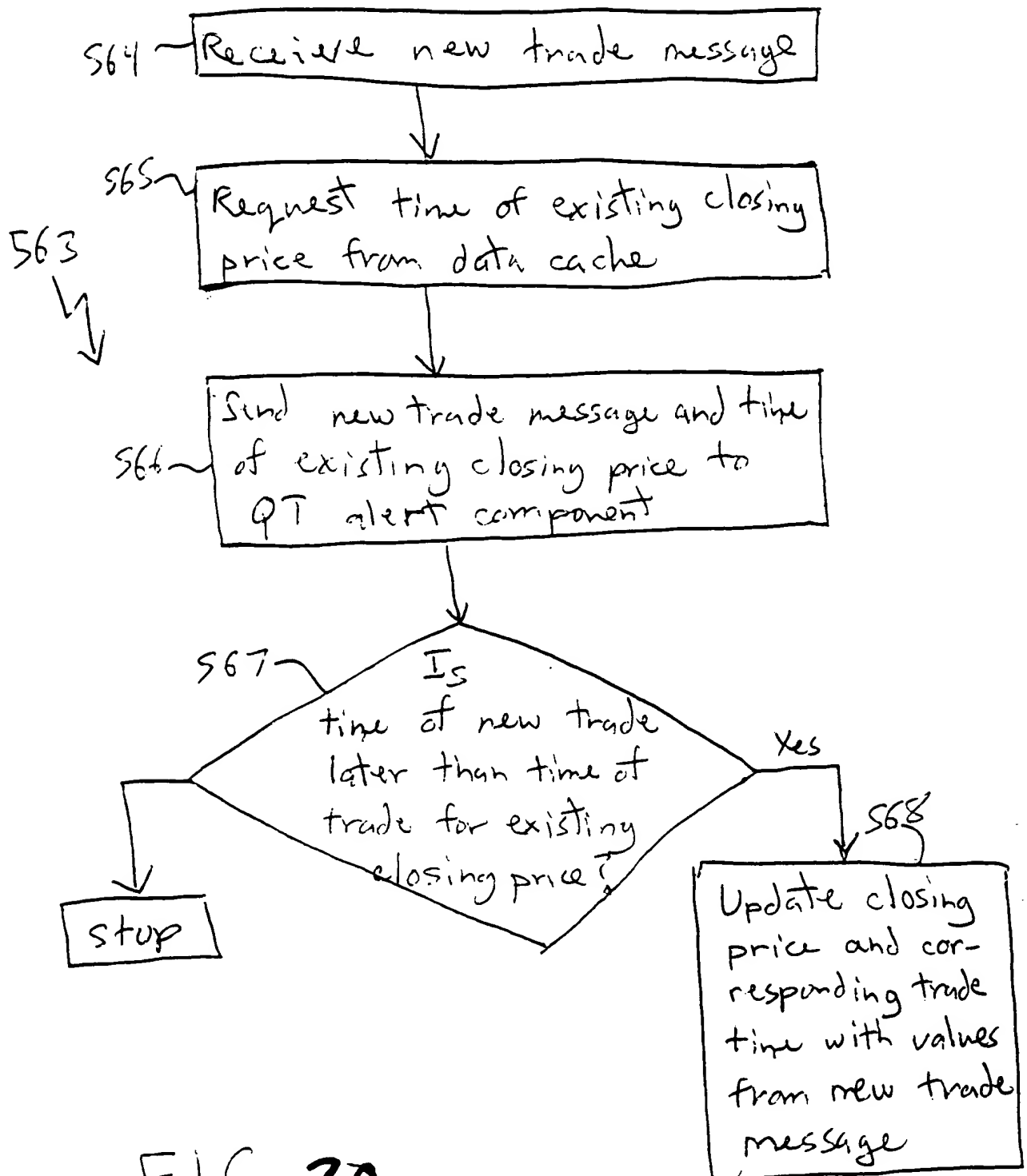


FIG. 30

569  
↓

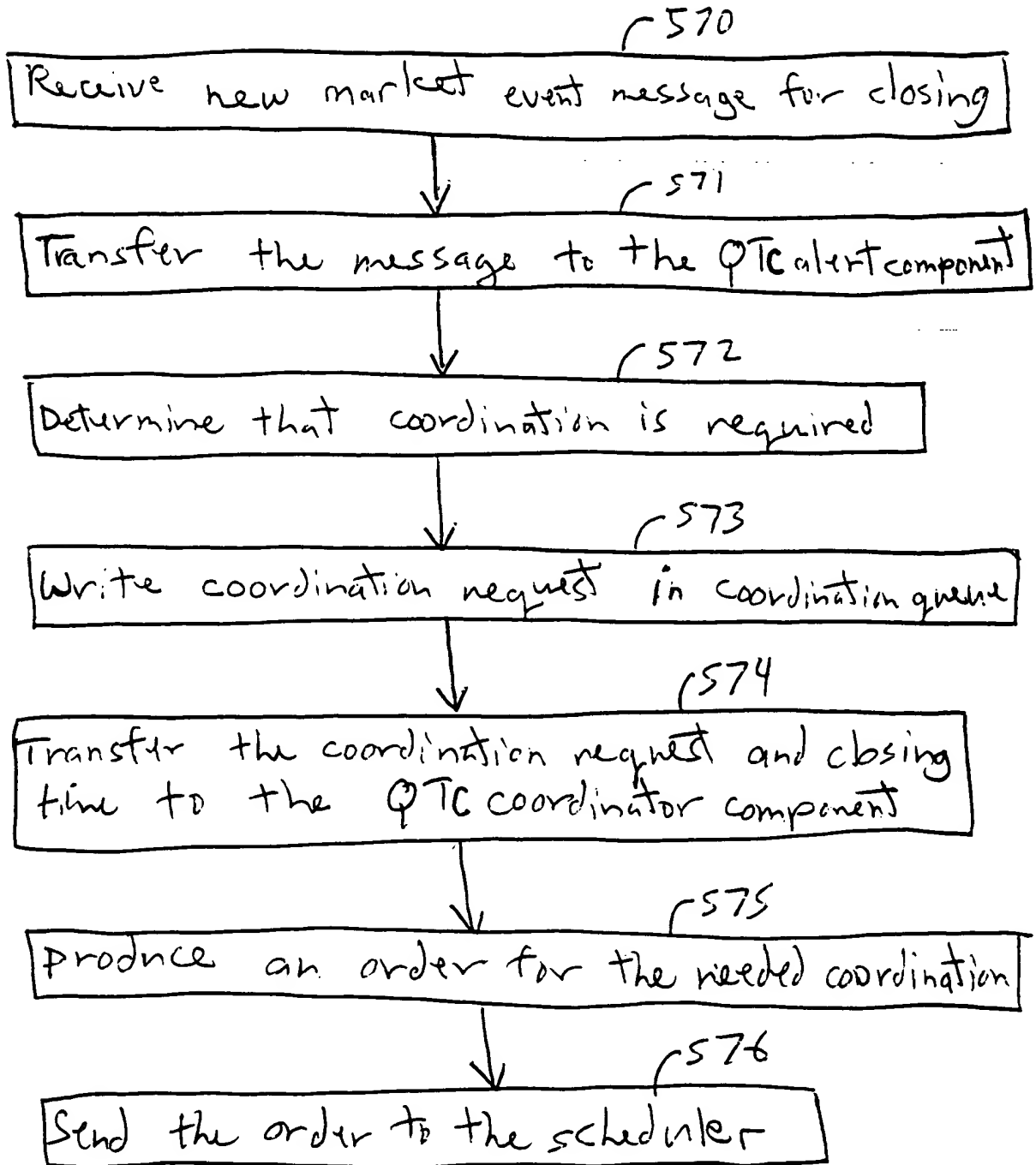


FIG. 31

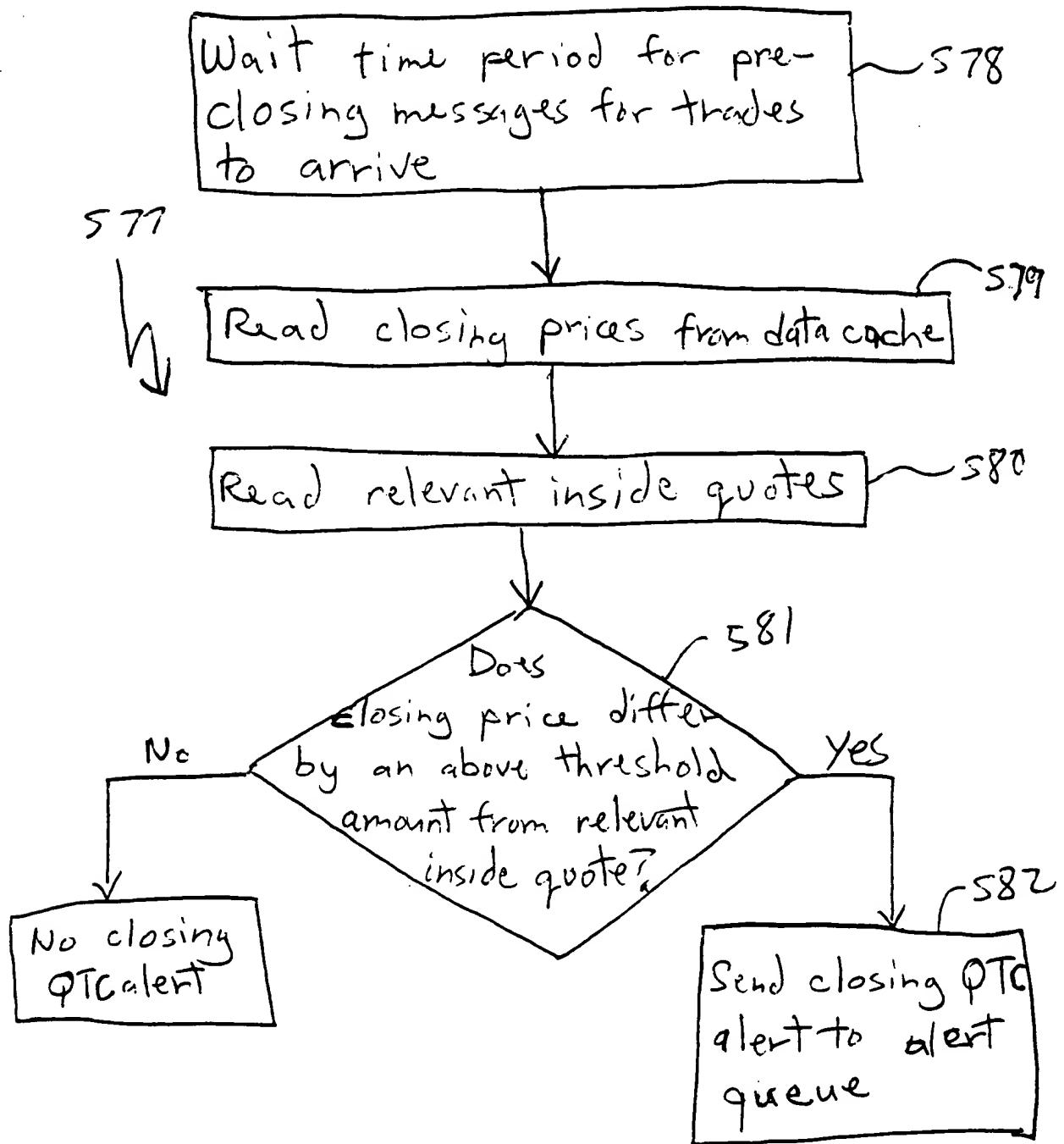


FIG. 32

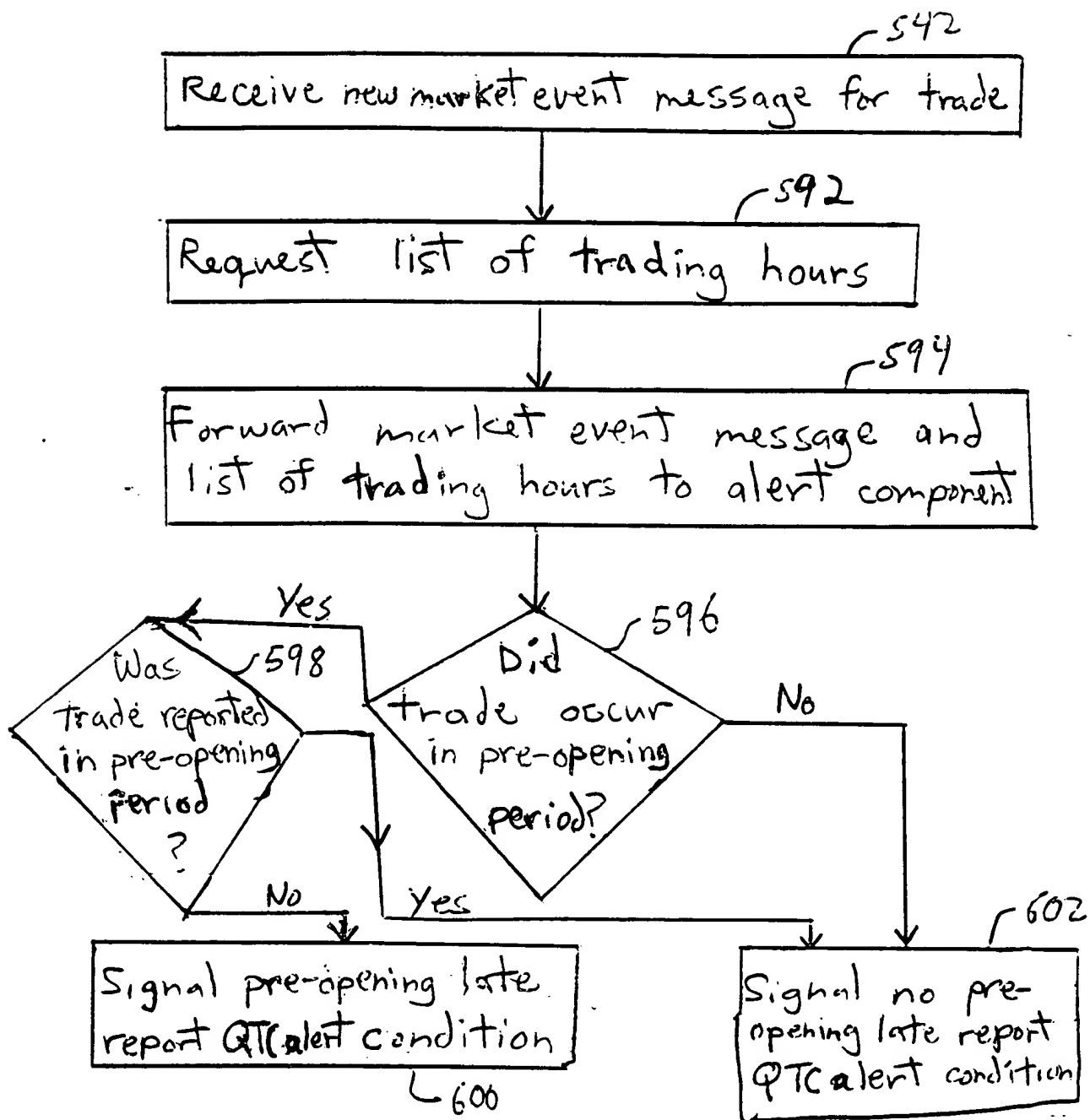
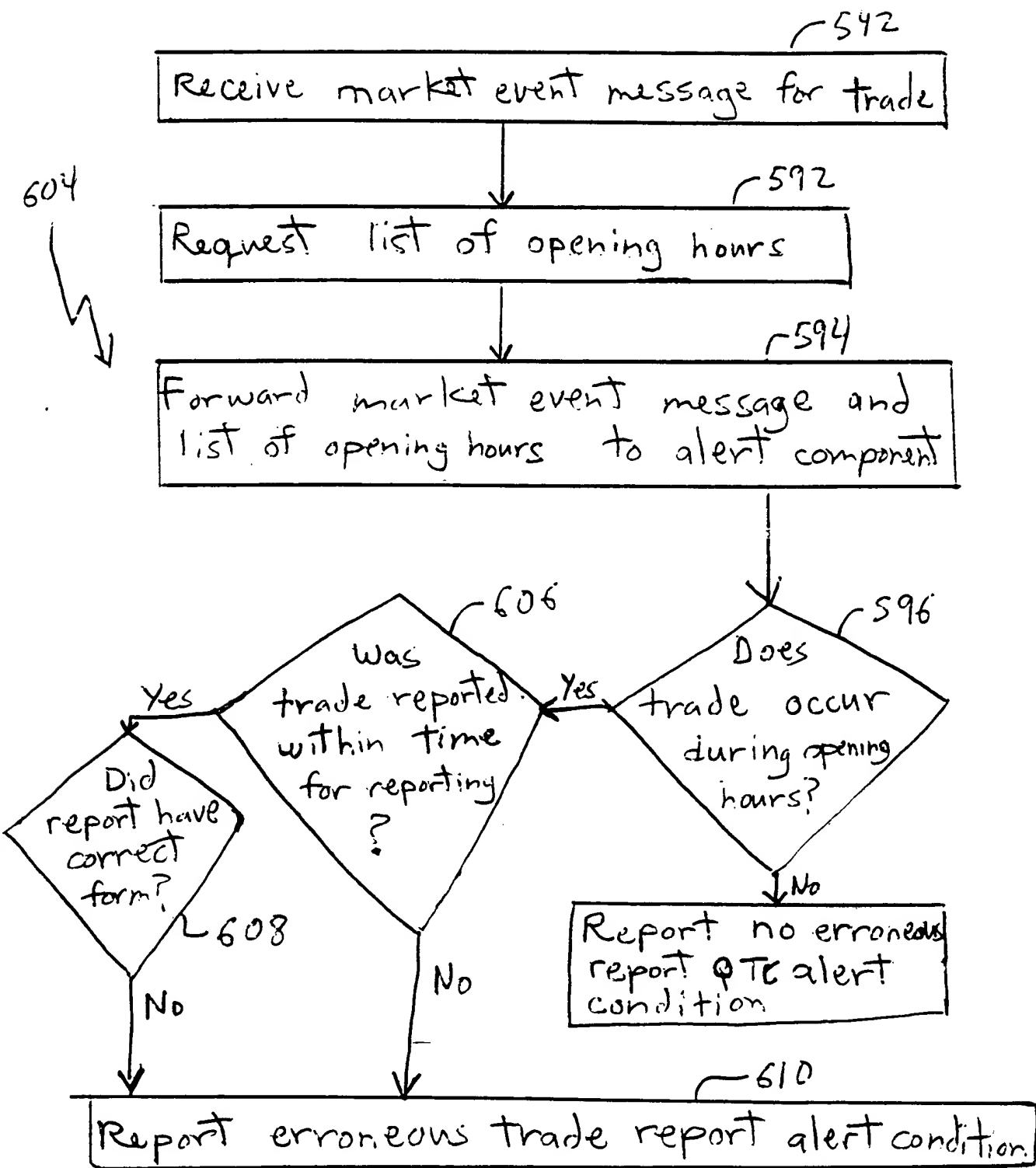


FIG. 33

590

604



F16. 34

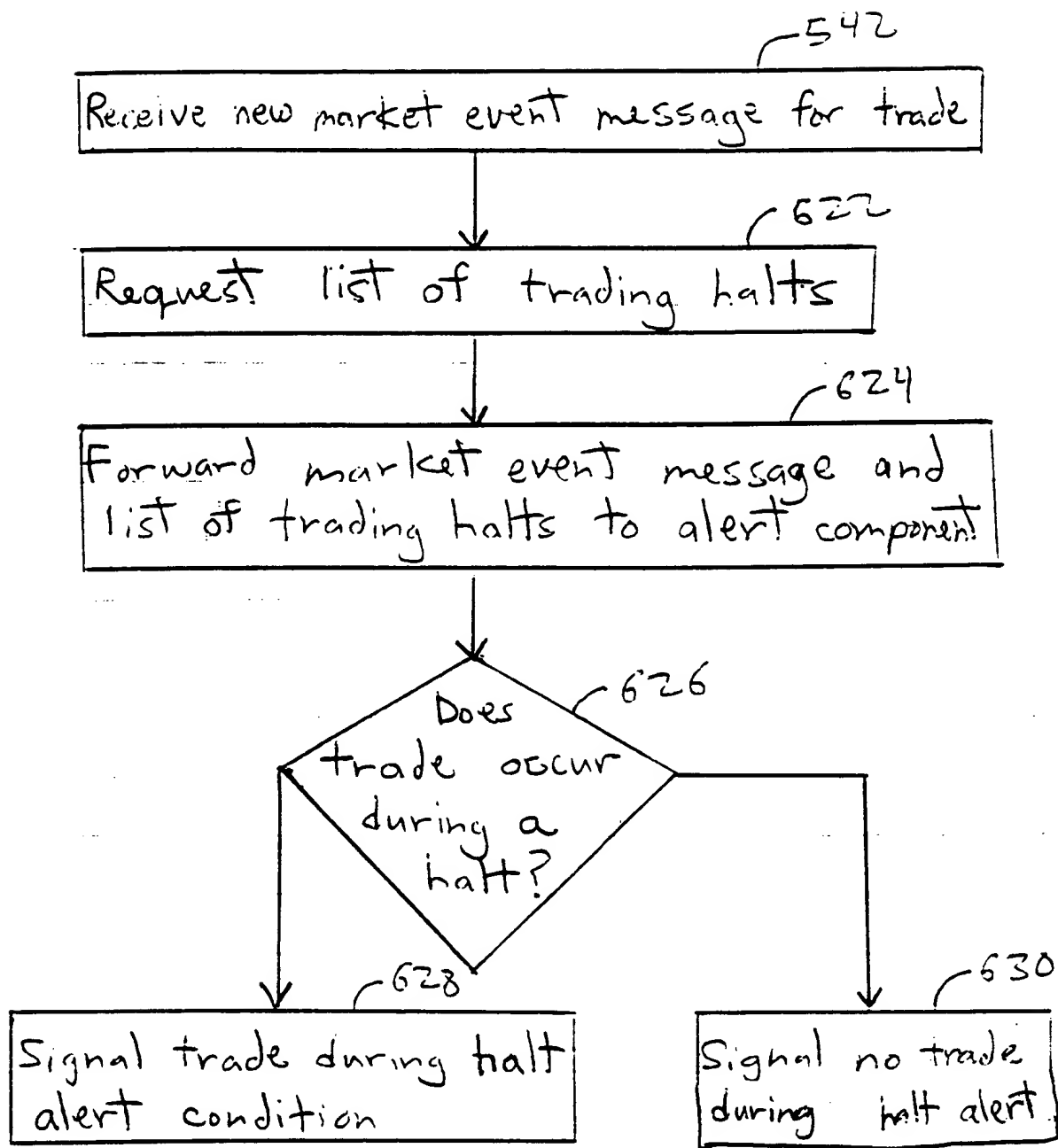


FIG. 35



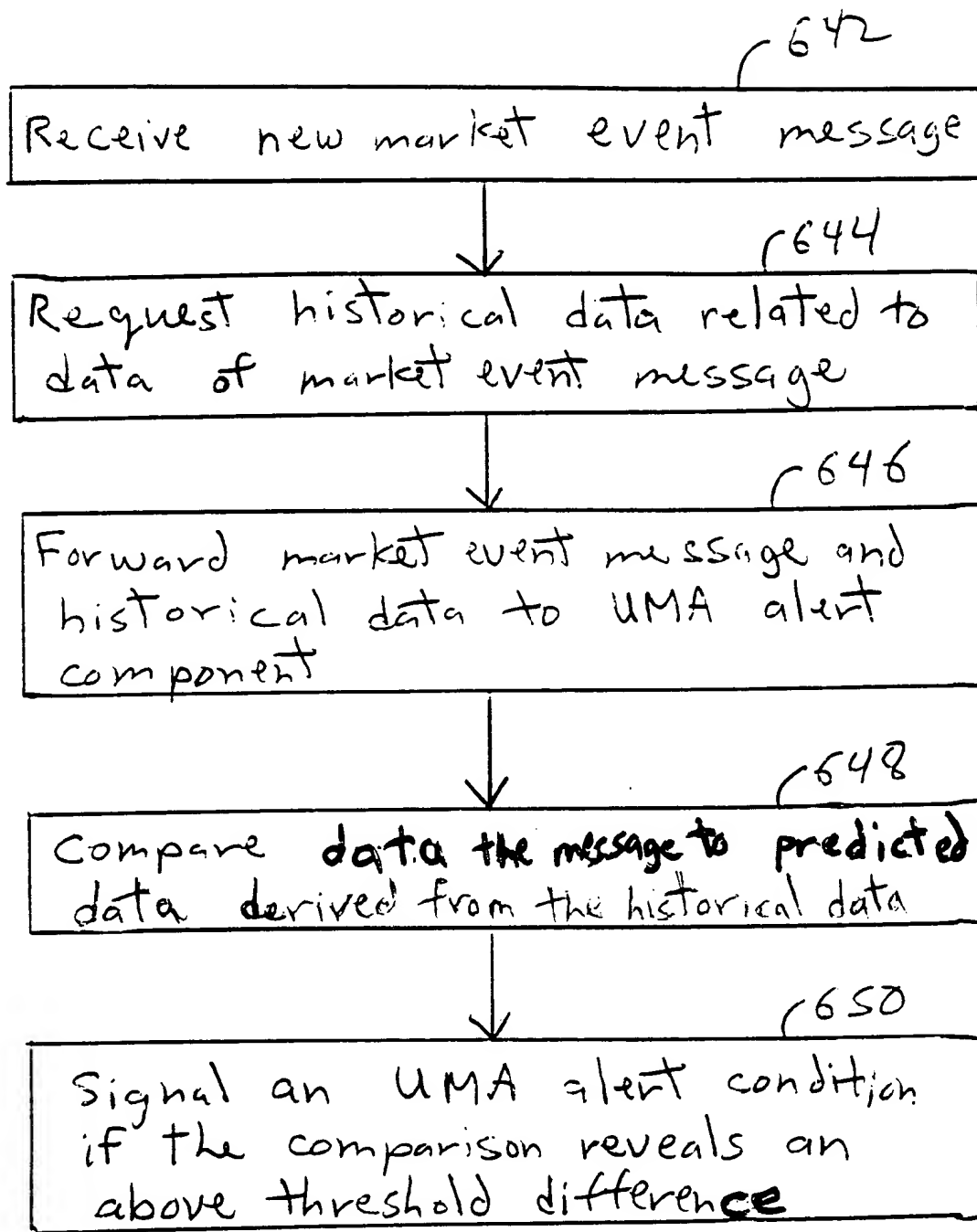


FIG. 36

676  
—678



$\mathcal{H}^1(\mathbb{R}^n)$

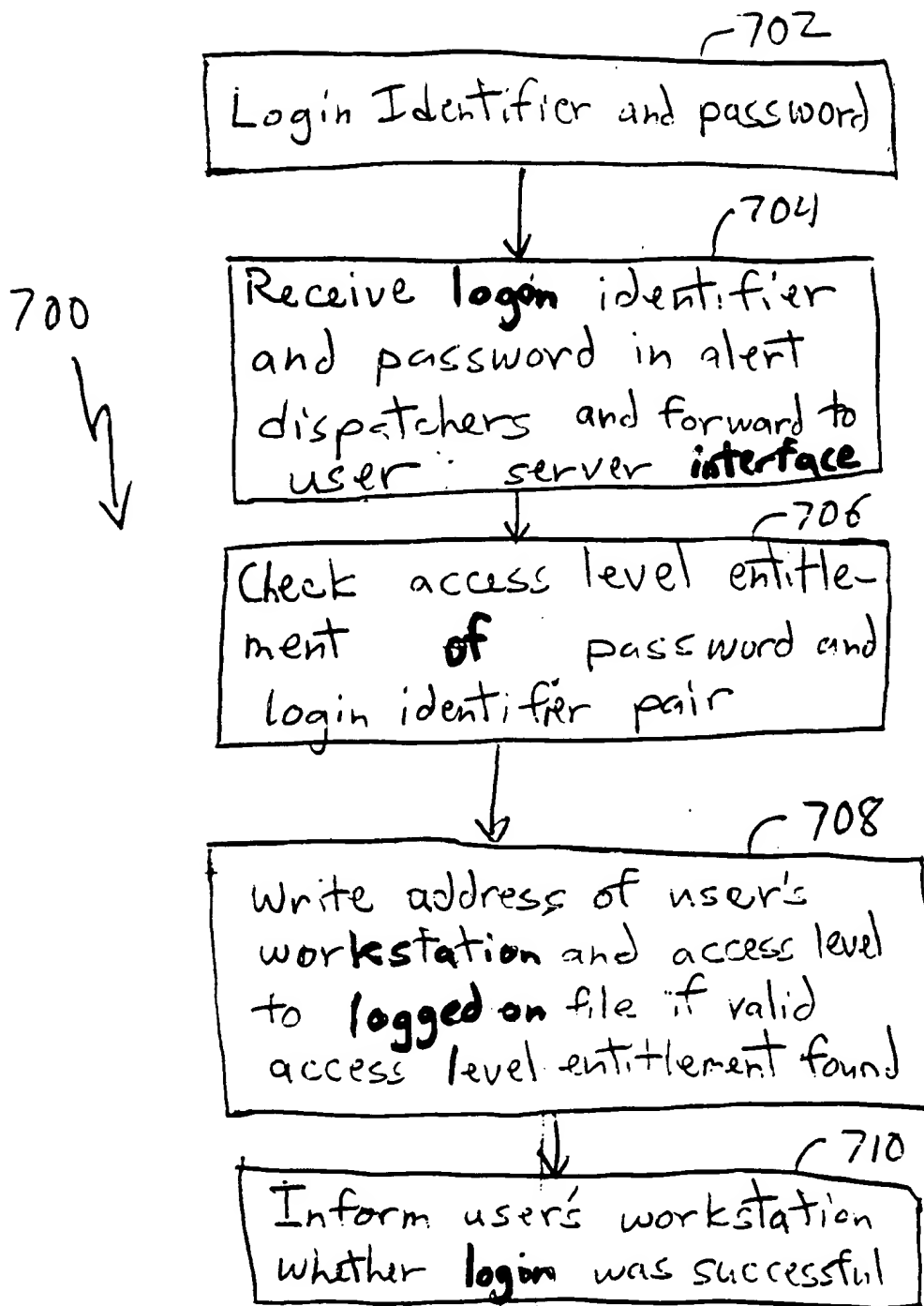


FIG. 39

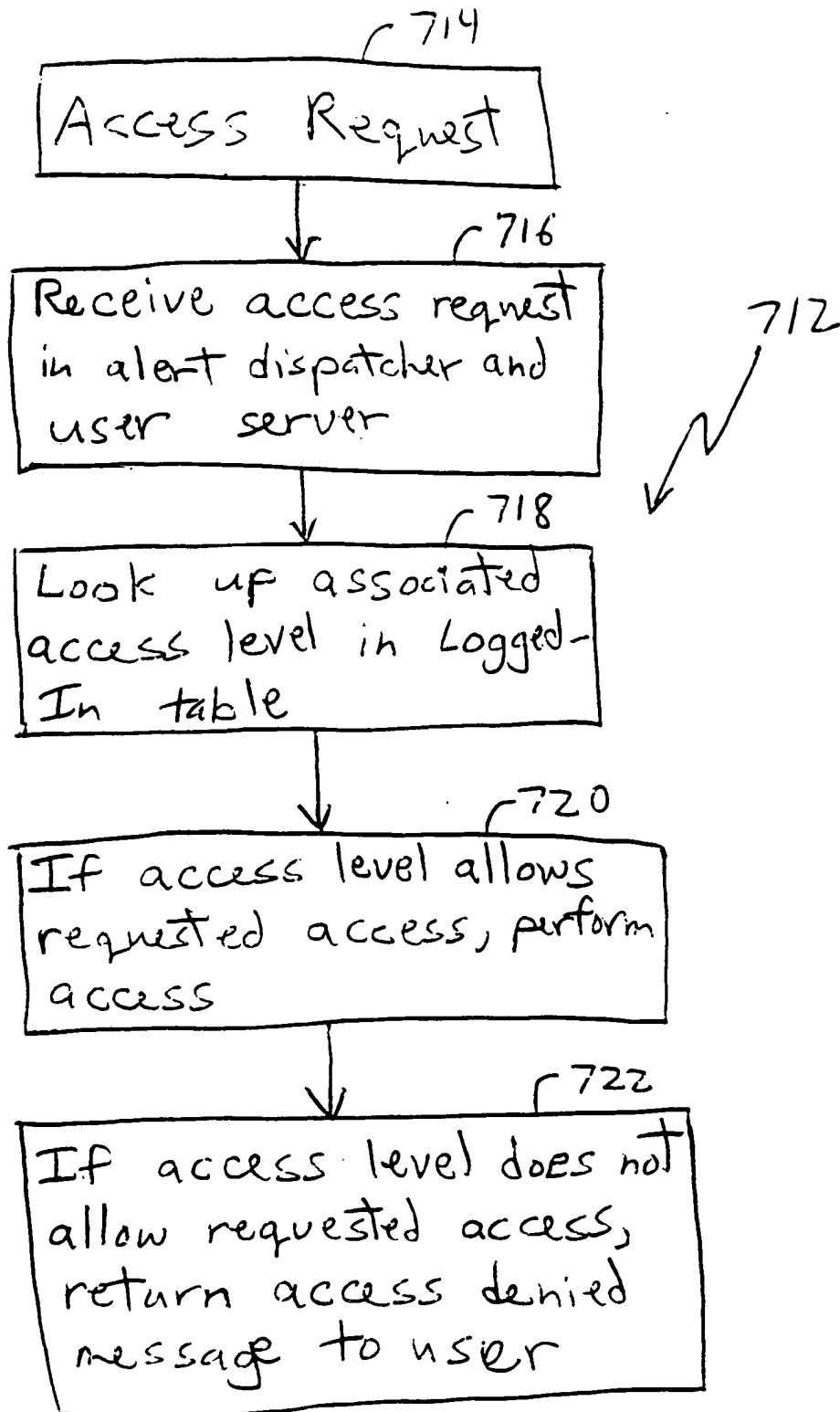
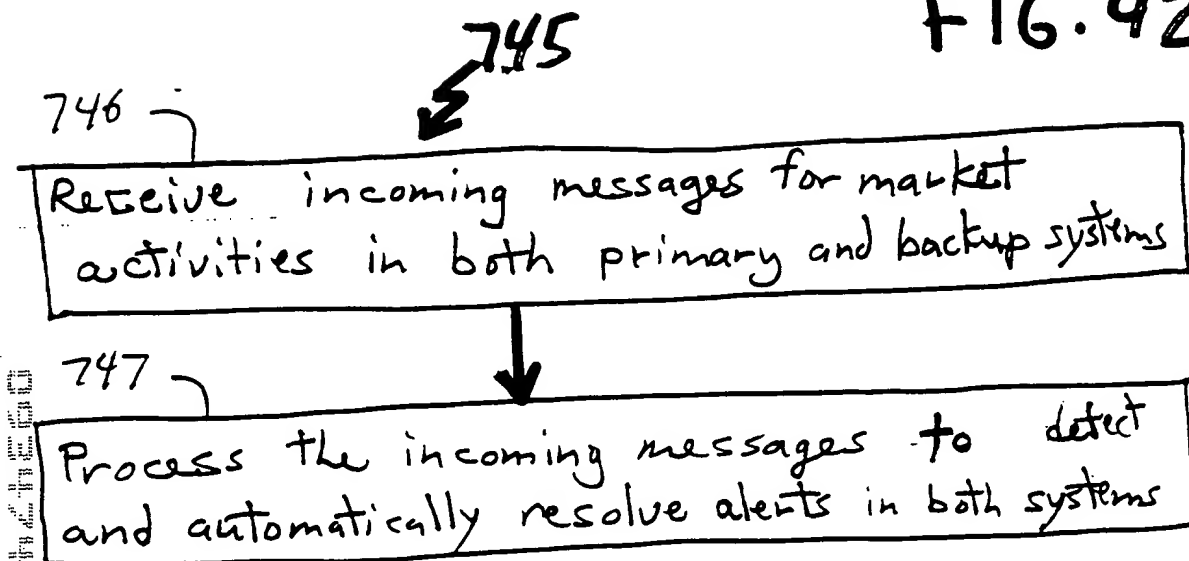


FIG. 40



FIG. 42A



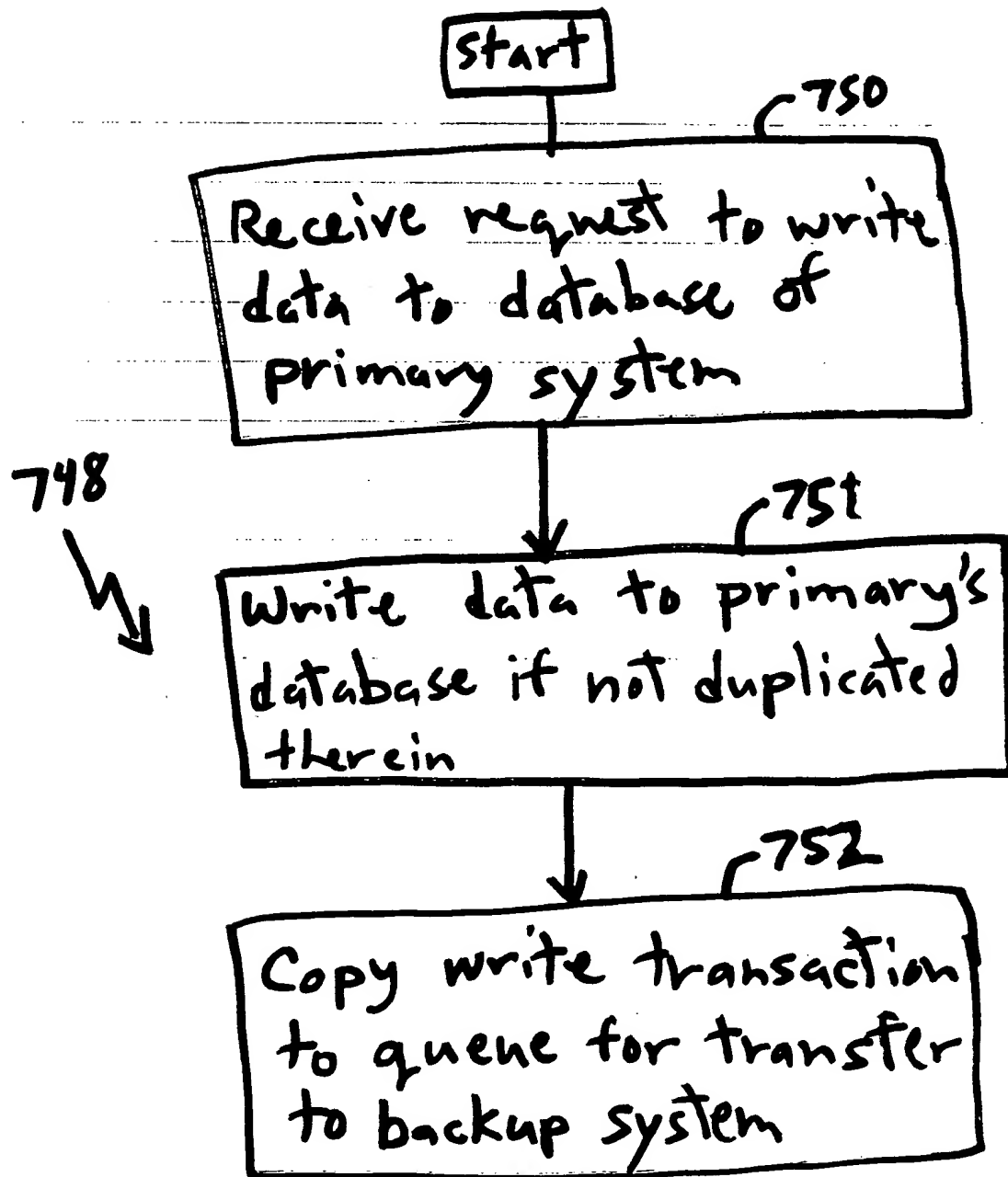


FIG. 42B



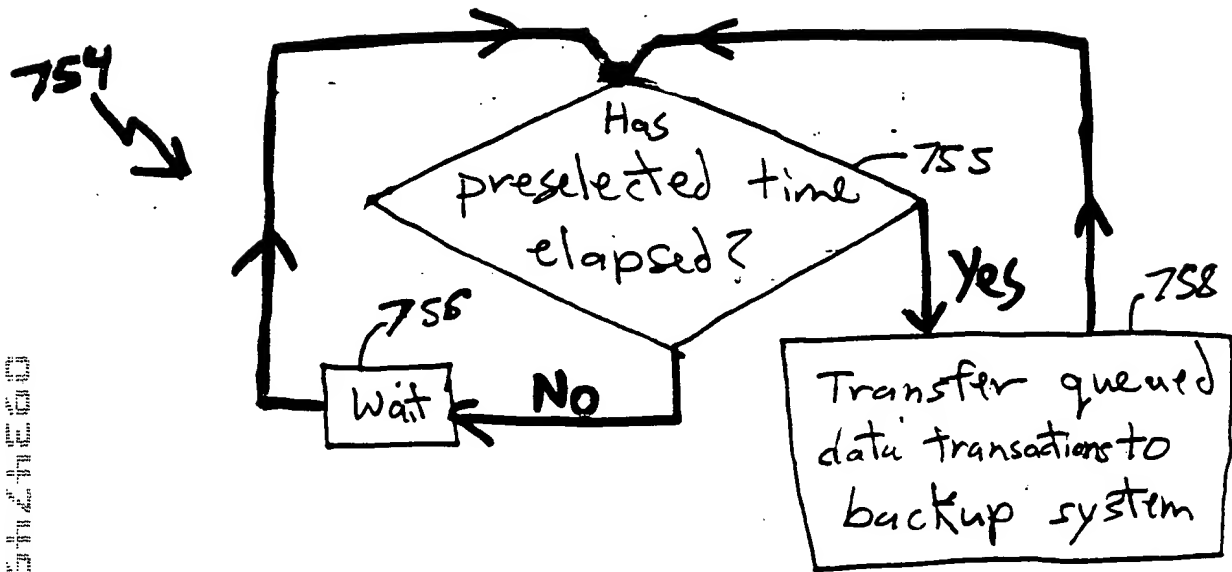


FIG. 42C

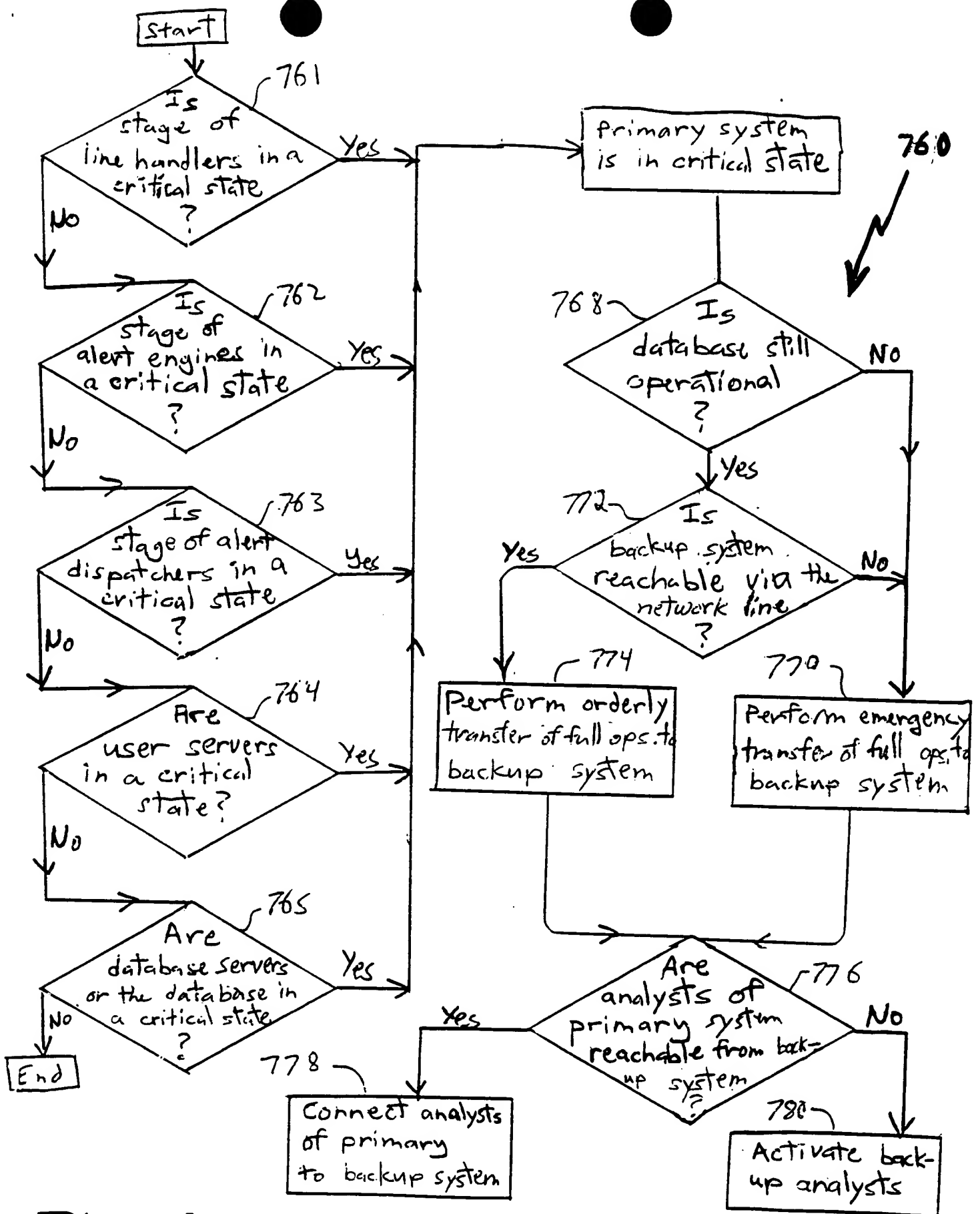


FIG. 43

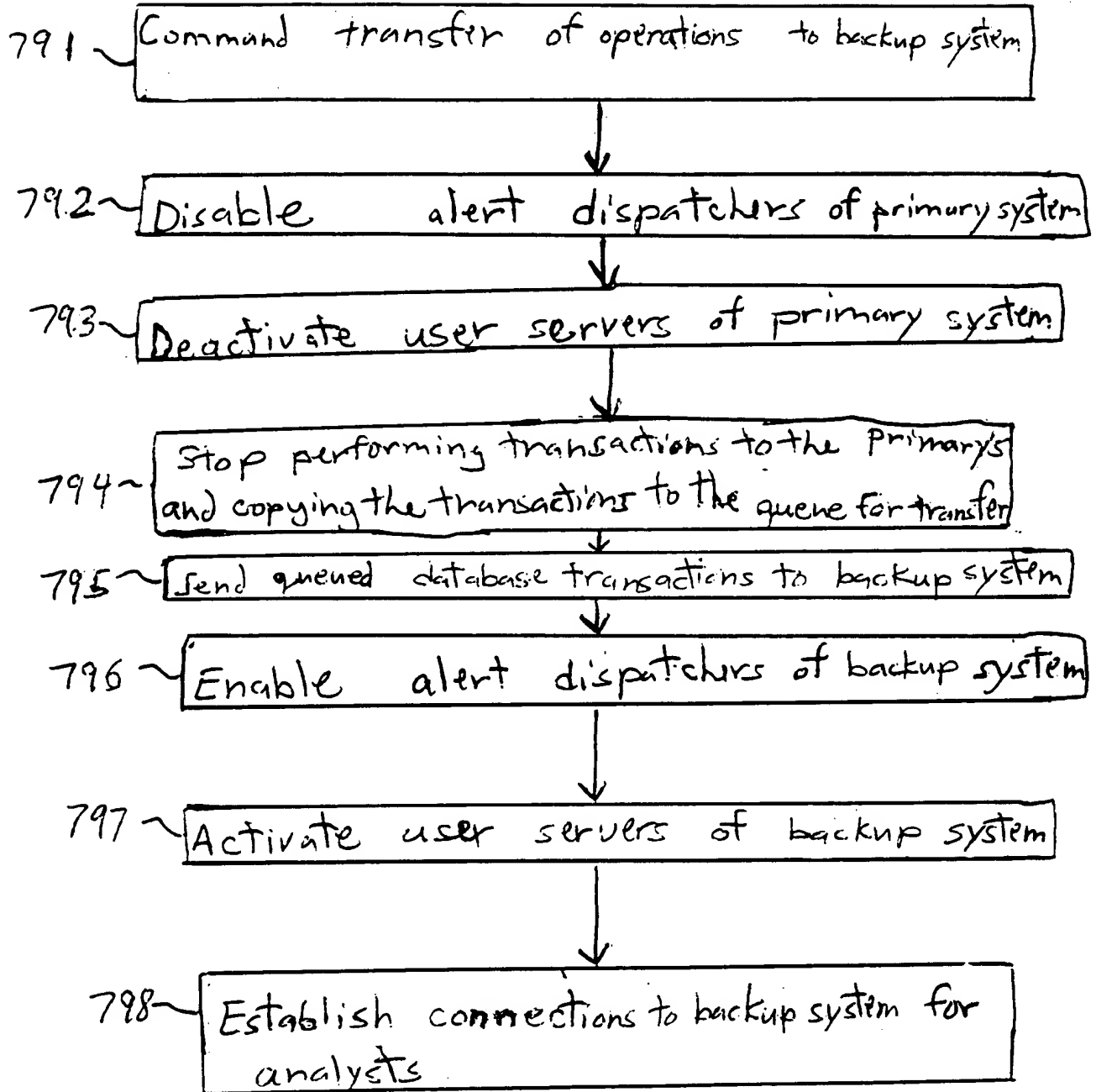


FIG. 44

790

791 ~ Command transfer of operations to backup system

792 ~ Disable alert dispatchers of primary system

793 ~ Deactivate user servers of primary system

794 ~ Perform database checkpoint at primary system and stop replication of data there

799 ~ Command full operations in backup system

796 ~ Enable alert dispatchers of backup system

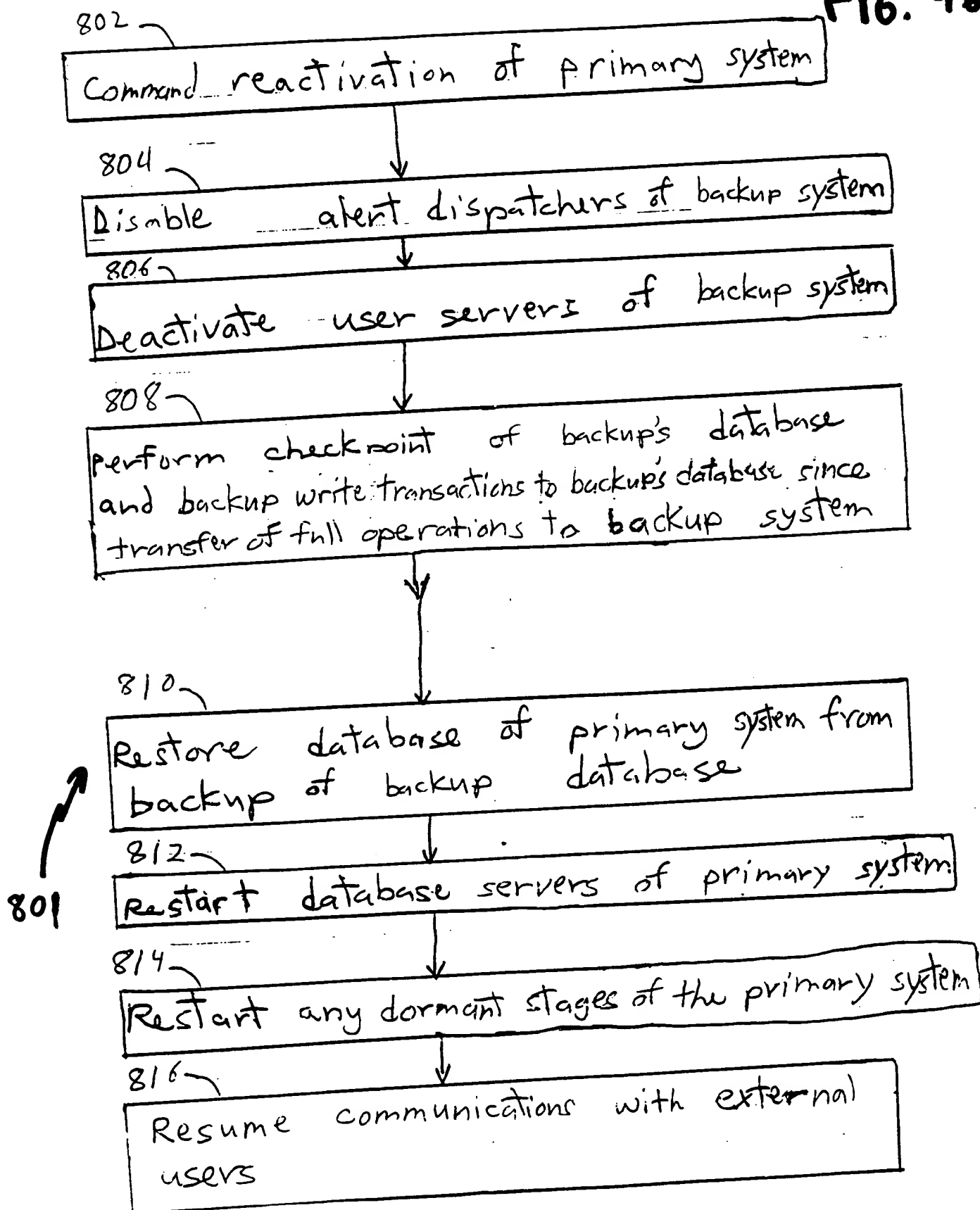
797 ~ Activate user servers of backup system

798 ~ Establish connections to backup system for analysts

800

FIG. 45

F16. 46



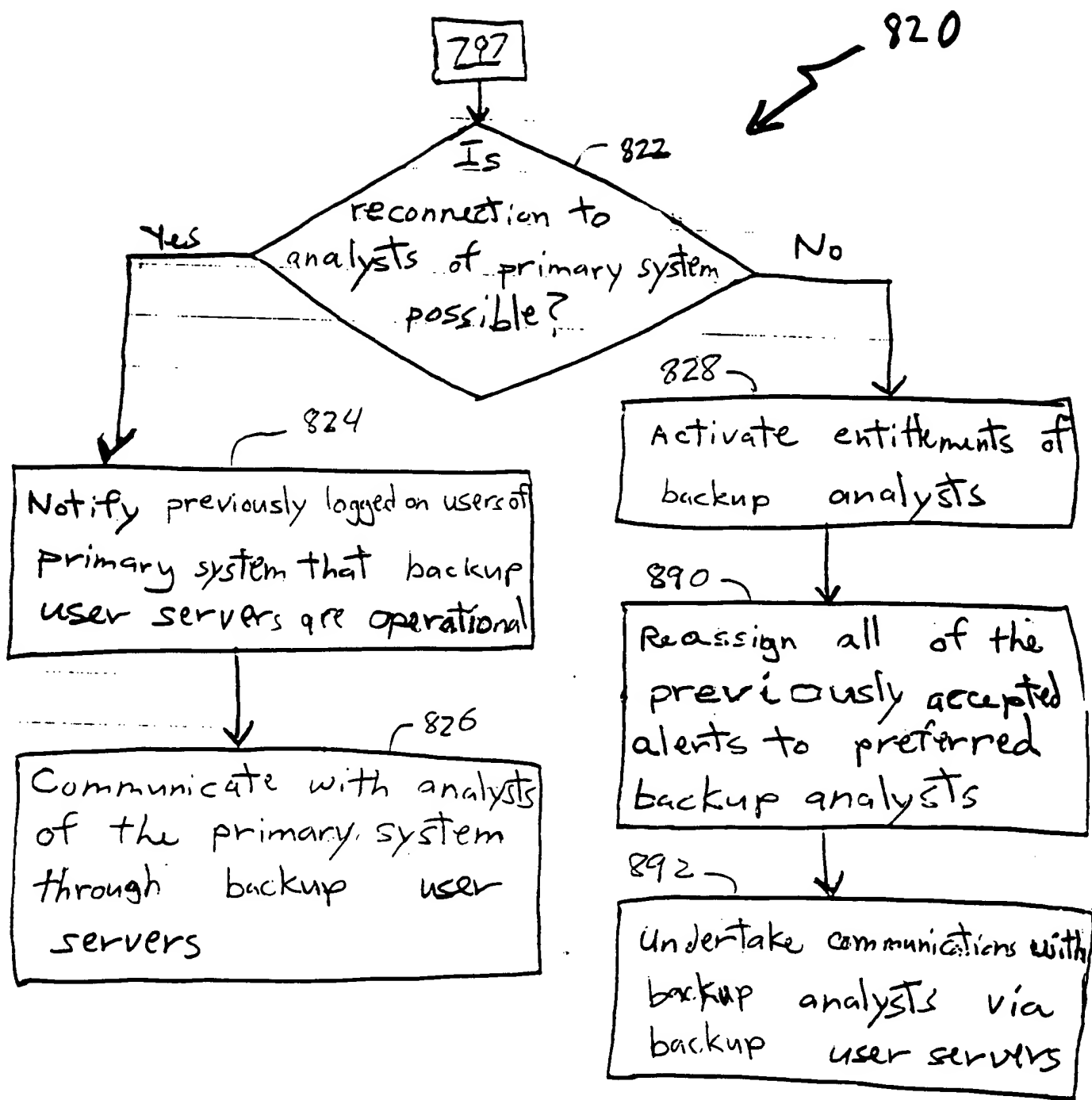


FIG. 47

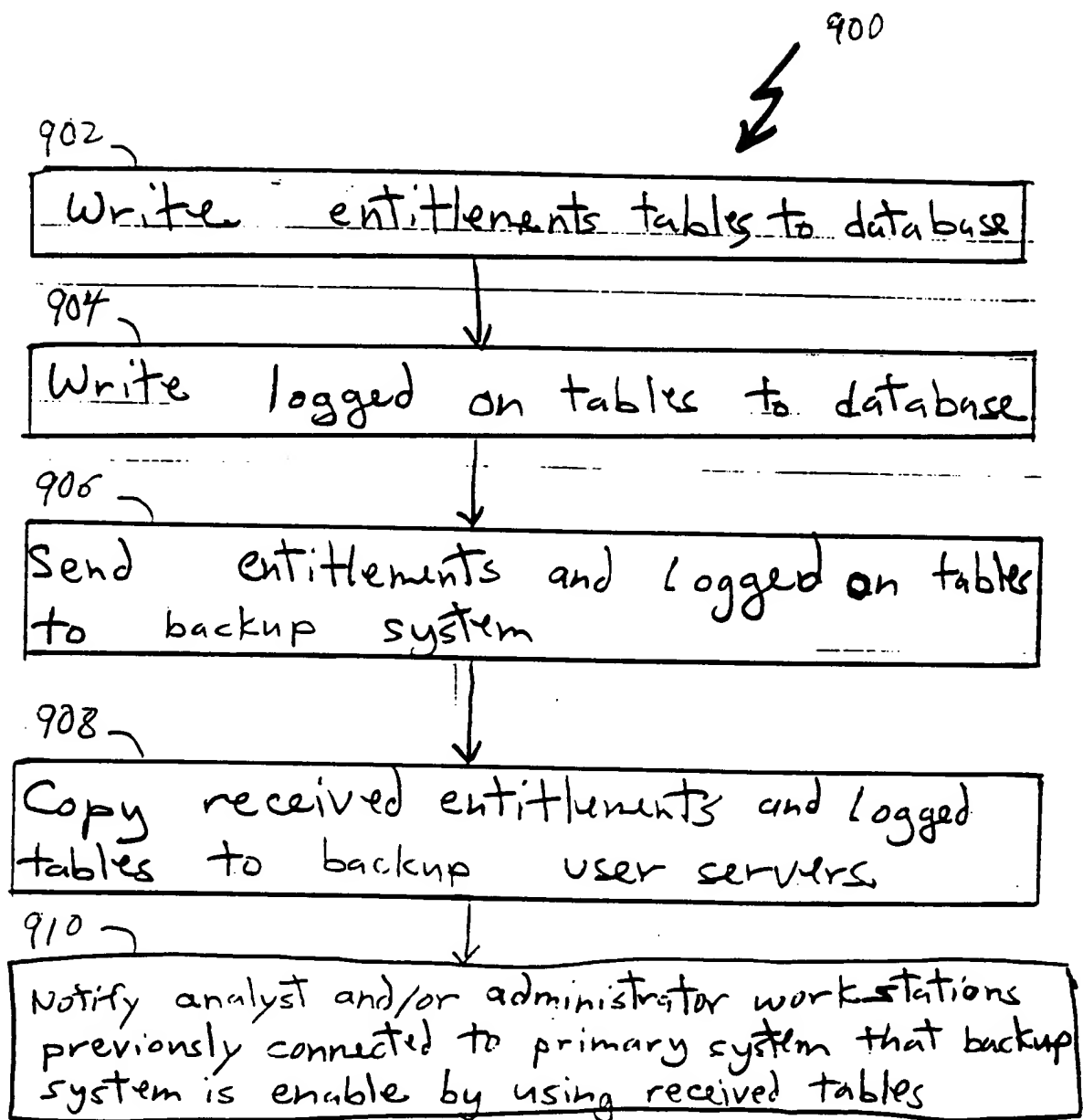


FIG. 48